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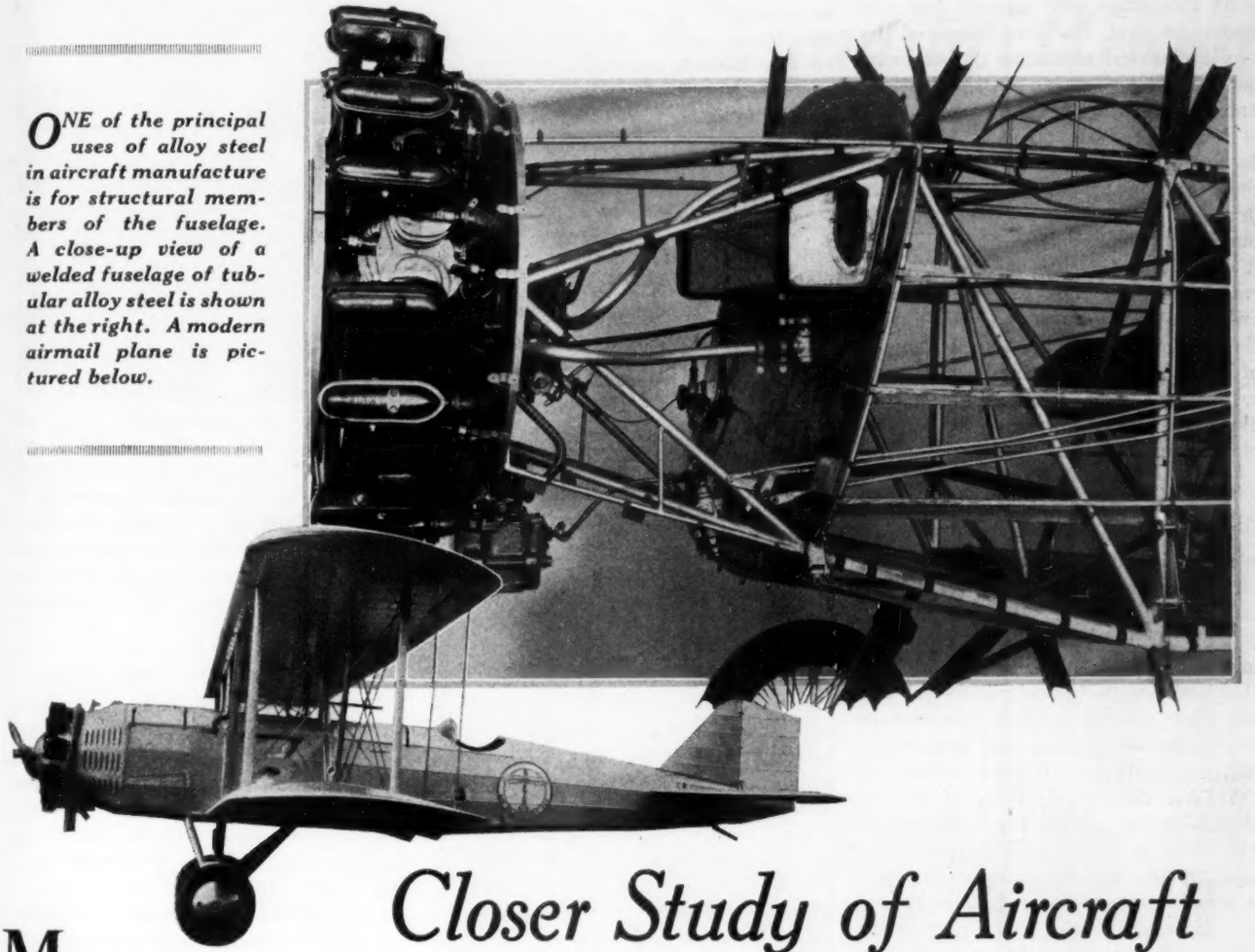

ONE of the principal uses of alloy steel in aircraft manufacture is for structural members of the fuselage. A close-up view of a welded fuselage of tubular alloy steel is shown at the right. A modern airmail plane is pictured below.

Closer Study of Aircraft Market Will Reward Steelmakers

By John J. Hardecker

MEASURED in terms of volume of production the manufacture of aircraft still is an industry of moderate size, but based on rate of expansion and popular interest, it is in the forefront of leadership. A remarkable advance has been recorded in the past decade despite the fact that during at least the first five of these years the industry was seriously handicapped by surplus war stocks of planes and engines.

The early planes of this ten-year period were essentially "stick and wire" jobs. Wood was used throughout for all structural purposes, with steel fittings at the joints to take the wood compression members. Steel wires and cables were used for tension bracing. In those pioneer days of small airplane production and still smaller steel requirements for planes, any mild carbon steel was regarded as satisfactory. The effect of this "easy" requirement still is reflected in the turnbuckles, terminals, etc., in use today, all of which have a gap designed large enough to develop their strength when attached to steel fittings of 55,000 pounds per square inch tensile strength and the other corresponding physical properties. The first step in the campaign to decrease structural weight —or dead load as the airplane engineer calls it— was to introduce the use of alloy steels. Every

pound thus saved in the dead load meant a corresponding increase in the pay load (fuel, passengers, freight, etc.) To the layman this may not seem significant, but an alloy steel fitting of corresponding strength can readily be designed at half the weight of the carbon steel fitting.

At this stage, the aircraft industry began to feel the handicaps of its own haphazard selections of both carbon and alloy steels. Organizations and individuals had their own ideas of which analysis of steel was best for a certain purpose and followed them out in specifications if not in practice, to the perplexity of their purchasing departments. Buyers found it difficult to expedite deliveries in the rather large range of small gages and shapes, because at no time during this stage was the combined demand of aircraft as an industry large enough to warrant special consideration, let alone the demand of individual airplane manufacturers.

Tend Toward Basic Standards

Insofar as agreement can ever be reached in such a fundamental matter, the aircraft industry gradually tended toward SAE 1025 (mild carbon steel) and SAE 2330 (nickel alloy steel) as its basic structural standards, with tensile values of 55,000 and 125,000 pounds per square inch after normalizing and heat treating, respectively. Higher values of the SAE 2330 steel were, of course, obtainable by special heat treatments. This was a fairly satisfactory solution for the time, although even then it was not always easy to readily obtain good deliveries in all sizes of sheet, tube and bar, for the aircraft industry was still far from a volume

Simpler Specifications for Steel Needed

CO-OPERATION between steelmakers and plane manufacturers to the end that specifications for alloy steels for airplane construction may be simplified is advocated in the accompanying article. As chief draftsman of the United States naval aircraft factory, Navy yard, Philadelphia, the author is in a position to see clearly the need of such simplification.

industry. The engine manufacturers still continued to use a wide assortment of alloy steels according to their own rather specialized needs for the highly technical requirements of the various component parts of an aircraft engine.

Simultaneously with this more satisfactory agreement of structural steel needs in the still essentially wooden plane, there began the serious development of the all-metal plane. The essential metal was an aluminum alloy, commonly called duralumin, with the physical properties of mild carbon steel at about one-third the weight. Fortunately for the aircraft industry, production of this light alloy was concentrated in the hands of two firms, to whom the rapidly expanding aircraft industry was an important market. The practical results of this concentration was an intimate contact between raw material and finished parts manufacturers, to the ultimate advantage of both. A growing technique on the part of airplane designers in the adoption of this light metal to their structural designs, and a constant research activity on the part of material manufacturers to improve their products in terms of the peculiar properties most desirable in aircraft construction, accomplished great strides in the development of the all-metal plane. Steel, of course, also was used in this all-metal plane, but to a lesser degree in some instances than in the earlier wooden planes. The intimate direct contact between the raw material source as concentrated in a few hands, and the aircraft industry as a whole, cannot be too highly stressed as the reason for the rapid development of the application of light aluminum alloy to airplane construction. While changes and improvements in the properties of the light alloy were many, this concentration meant that at any given time all aircraft manufacturers were using essentially the same specification material. Any improvement in the material almost immediately was reflected throughout the airplane industry.

It is agreed that when airplanes approach the production phase now occupied by the automobile, the all-metal plane will be the means of expression. Duralumin and steel probably will be the major copartners in the undertaking. Steels developed especially for aircraft use will assume a greater role than they have as yet played in any phase of aeronautical development.

Steel Assumes Major Role

At present, when production of the individual manufacturer aims at the maximum of three or four airplanes per day, steel is assuming a new major role in production. Chrome molybdenum steel, (SAE 4130 and various modifications) is rapidly gaining favor. In the "as received" condition, chrome molybdenum steel may be used without heat treatment in place of carbon steel. When properly heat-treated chrome molybdenum steel will develop the physical properties of nickel alloy steel without difficulty. Thus the airplane manufacturer has

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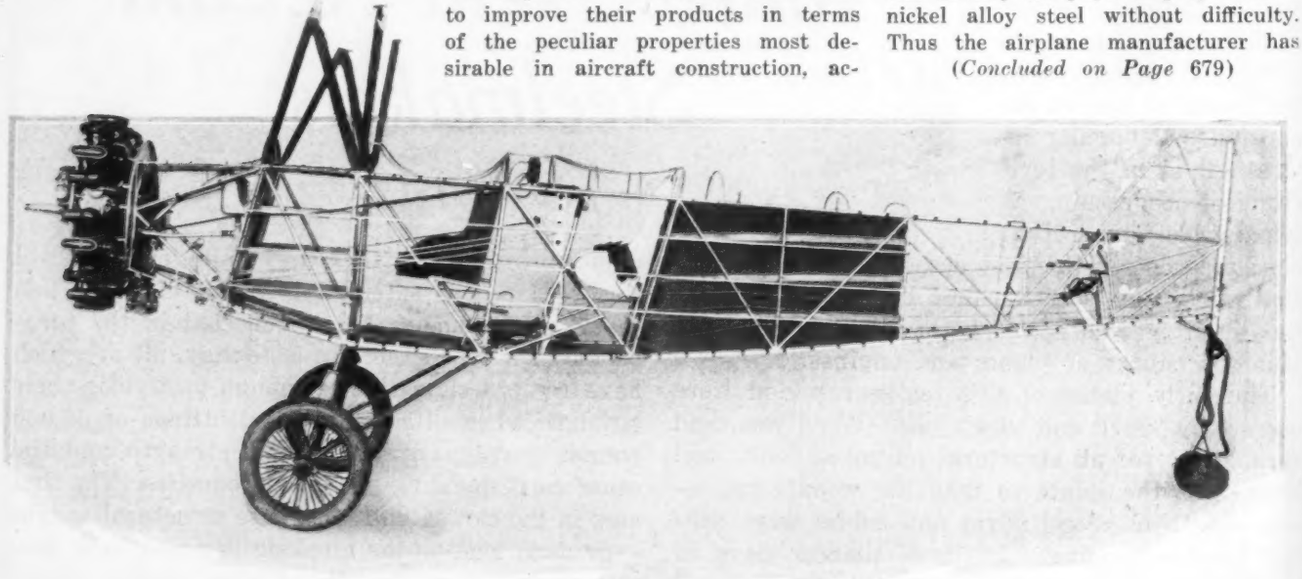
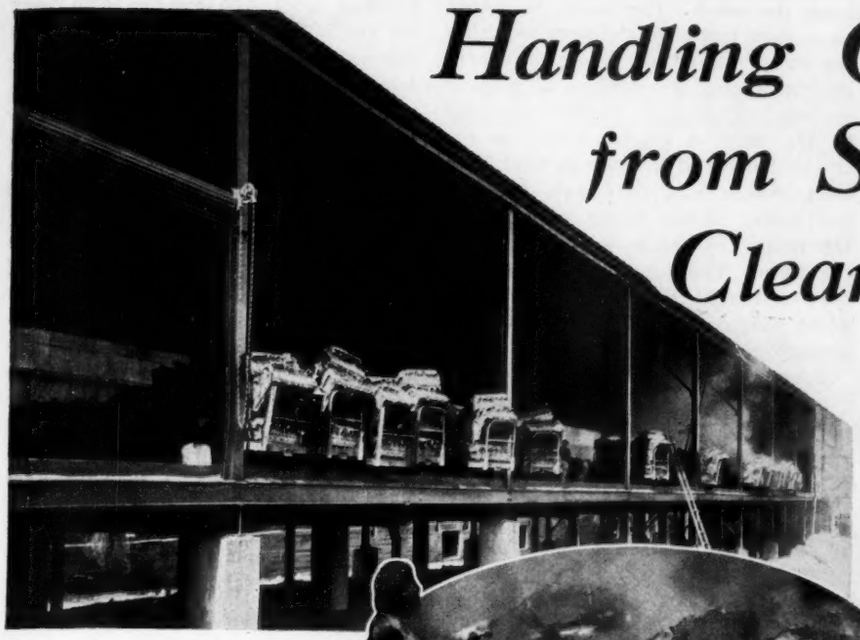


A light and strong, welded tubular steel, airplane fuselage

Handling Castings from Shakeout to Cleaning Room



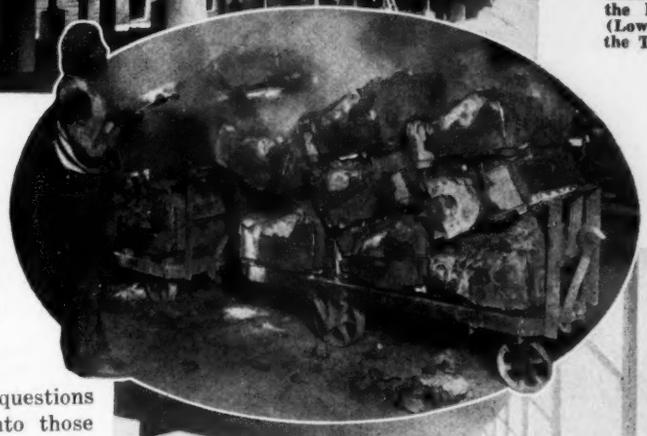


Fig. 1 (Upper Left)—General View of the Cooling Shed Where The Castings Are Left 24 Hours To Cool. Fig. 2 (Center)—Loading Truck with Cylinder Blocks at the End of the Molding Line. Fig. 3 (Lower Right)—Gasoline Tractors Carry the Trucks to the Cooling Shed and Later to the Cleaning Department

THE problem of handling castings in foundries where production approaches a quantity basis is likely to assume rather serious proportions, from both an economic and a practical standpoint. Aside from the problem of proper routing of material, the questions usually resolve themselves into those of the selection of equipment, and its proper maintenance. Naturally, a desirable system is the one that represents the low investment both initially and for upkeep. This in itself presupposes a careful choice of equipment with the idea, first of eliminating reserves to compensate for outages in the system, and, second, of reducing all the items coming under the head of maintenance expense to a minimum. The problem in foundries is complicated by conditions such as temperature, atmosphere, and character of the material to be handled. There is probably no other type of industrial service where conditions are any more severe, and few where they are comparable.

The Lakey Foundry Co., Muskegon, Mich., has established a material handling system that has several interesting features. The company operates two foundries which for all practical purposes may be considered as separate units. One plant is devoted to quantity production of cylinder blocks for gasoline engines, and has an average production rate of 1250 castings a day. The other produces smaller castings, such as cylinder heads, flywheel housings, flywheels, and similar articles, at the rate of about 120 tons a day. Thus, production in both may be said to be on a quantity basis. The principal problems in both concerned the handling of the castings from the end of the molding lines through the subsequent processes and, incidentally, the salvaging of scrap iron and its delivery to the cupolas for melting. Since the details of the system adopted differ somewhat in the two foundries, they will be considered separately.

The equipment composing the handling system in the cylinder block foundry consists of 150 shop trucks, specially designed for the service, and two gasoline tractors. Since the design and construction of the trucks has had considerable bearing on the general effectiveness of the system, a short description of them may be of interest. The trucks were built for the service by the Service Caster & Truck Co., Albion, Mich., and are practically uniform in size and general construction. They have a rated capacity of about 6000 pounds. The body frame consists of a single heavy channel section bent to form. The frame is braced by both longitudinal and transverse channel sections and by gusset plates at the points of greatest strain. The body is carried on four wheels, the rear ones being on a fixed axle held by brackets. The front wheels are on individual casters to give a short turning radius, and general ease in handling. Both the casters and the wheels themselves are equipped with roller bearings, made by the Timken Roller Bearing Co.,

Canton, O., and are mounted in closures that prevent the entrance of sand, or other foreign matter coming either from the load or the floor.

The material handling procedure is substantially as follows: The castings are made on four straight progressive lines that parallel each other the length of the buildings. When the casting, core and all, arrives at the end of the line, it is lifted from the flask by an air hoist, and deposited on a truck which has been spotted at the end of the line. The copes and drags are emptied over a sand grating, and returned to the beginning of the line by a monorail crane. Usually two trucks are spotted at the end of the line, so from the sand. The metal is loaded on a shop truck for delivery to either the scrap pile or to the cupola charging floor, and the sand to a gondola for waste disposal. To return to the cooling shed, a tractor picks up the trucks loaded with castings that have been shaken out, and hauls them to the mills. After being unloaded at the mills, the trucks are returned to the lines. The progress of the castings through the remaining processes, chipping, sand blasting, etc., is accomplished by gravity conveyors.

From the foregoing it may be seen that a simple circulating system has been developed which is sufficiently flexible to compensate for the delay in the flow of material caused by the

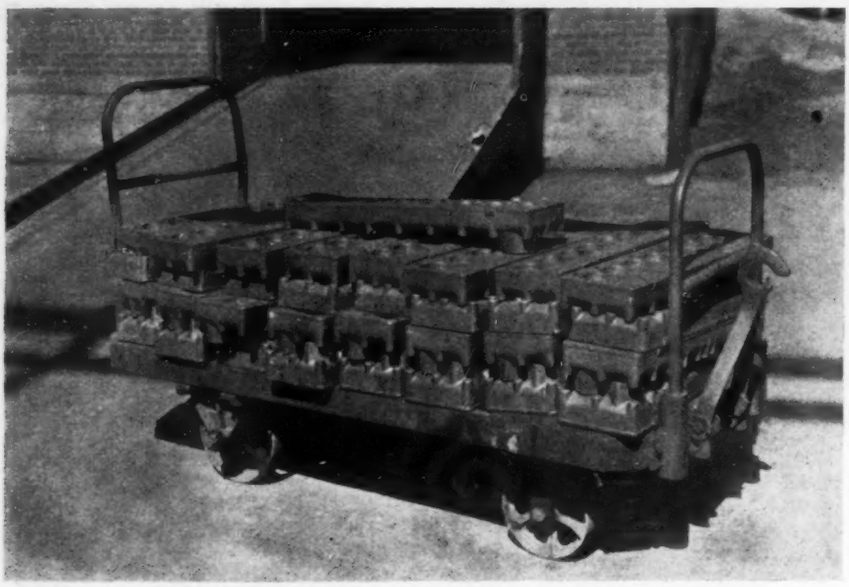


Fig. 4—Type of truck used to handle castings in the foundry

that there will be no delay caused by waiting for empties. The gasoline tractors, making continuous rounds, pick up the loaded trucks and haul them to the cooling station which, as shown in Fig. 1, is an open building, or shed, directly adjoining the foundry proper. Here the loaded truck is parked near the edge of the platform, and its load is allowed to cool for about 24 hours.

At the far end of this shed is an enclosed section where three shake-out rams are installed. After the tractor has delivered its load of hot castings, it picks up a truck whose load has cooled, and spots it on one side of one of the shake-out machines. An empty truck is spotted on the other side of the machine, so that the castings progress in a straight line through the machine. The core sand, rods, gates, and other scrap metal dislodged from the castings, fall through a grating on a short belt conveyor equipped with a magnetic pulley which separates the metal long cooling period. As is the case in most of such systems, its effectiveness depends considerably on the ability of the individual units making up the system to give continuous service. As one means to this end, an effective lubrication scheme has been developed, whereby proper lubrication of all trucks, at all times, is secured. The trucks are all numbered, with a foundry number and a truck number, so located as to be plainly visible. A lubricating station has been established at a point passed by all unloaded trucks going from the mills to the lines. One man located at the station, sees that each truck is lubricated properly. A chart is posted at this point, on which are the truck numbers, and the weeks of the year, and which shows at a glance which trucks are in need of attention on any particular day.

It is a simple matter for the man in charge to spot any of these trucks which may be in the train going by. He has them cut out of the train, lubricates them, and then has them ready for the tractor on its next trip. Once lubricated the truck is marked, as an additional indication, with a painted spot on one corner, the colors alternating red and white from one week to the next. By means of this scheme, one man can lubricate 30 to 40 trucks each day without impairing the effectiveness of the system as a whole. The scheme also insures the lubrication of every truck in the system at least once a week. Under ordinary conditions, such a constant attention to the lubrication of antifriction bearings would be unnecessary, but in this case a good many factors are present that make it vital. In the first place, foundry service is notoriously hard on bearings because of the sand that is continually present. In the second place, the bearings in this case are subject to excessive temperatures over long periods of time, because of the heat radiated from the load while standing in the cooling shed. In brief, the schedule that has been adopted is based on the actual circumstances encountered, and has therefore undoubtedly contributed much to the general effectiveness of the system by eliminating delays, or interruptions that might otherwise develop.

Procedure Differs Slightly

The procedure in the other foundry is slightly different, although the same general methods are in force. The mold conveyors on which the cylinder head, flywheel, and other castings are made have been placed transversely on the floor, leaving a clear aisle at one end common to all the lines. The trucks are spotted in this aisle at the ends of the respective lines, and the castings taken from the molds are loaded directly upon them. A tractor picks up the loaded trucks on its periodic rounds, and leaves an empty in its place. At the beginning of the day, two trucks are spotted at each line, so that there will be no delay waiting for empties. The trucks are then hauled to the mills, where they are unloaded, and returned to the lines for further use. Other trucks are spotted at the mills for loading with scrap iron which is taken to the scrap pile, and eventually to the cupola charging floor. Thus the circulation of the individual units is much faster, and a smaller number is sufficient, since none of them is held out of service by the necessity for a long cooling period.

The lubrication system also is simpler, partly because of the smaller number of trucks, and partly because the service is not as severe. The custom is to grease all the trucks at once, picking a period for this service when the foundry is not working.

A Cycle in Transportation

How Ford Scrapped Surplus War-built Ships and Reclaimed Material for Land Service

Part IV—Ships Yield 216,532 Tons of Steel Scrap

DURING 1926 a progressive operation was followed at the main dismantling dock. There were ten positions, and as one ship was completely scrapped the others would be moved up a notch in line. This method was changed in 1927; each ship remaining at one place through all the work except the removal of the engine and boilers and the final cutting at the floating drydock. In 1926 the submarine scrap cargo in the lakers was removed largely through the hatches; in 1927 the top decks were first removed, furnishing easier access to the cargo.

The first step after a ship had been tied up at the main dock was the removal of such deck machinery and equipment as had not been taken off before. Then the ship was marked into squares for cutting. These squares followed a master diagram and provided for salvaging steel in as large sizes as possible.

The hulls of the vessels were all badly corroded. In some cases the rust was ⅝-inch thick. Oxygen gas torches obviously could not cut through metal already oxidized, so before the cutters could begin work pathways were cleared along the chalk marks by pneumatic chipping tools.

At intervals along the chalk marks a six-inch portion would be marked "Save." This would not be cut until the section was gripped by the crane slings; then it was completely severed and the section hoisted upon the dock. Thus workman were prevented from "sawing off the limb they were working on," and accidents avoided.

Removal of the superstructure and deck cabins came first in the cutting operation. The steel deck houses were burned close to the deck and taken off intact. Many of them were used in various parts of the Fordson plant as tool cribs, stockrooms, etc. With their watertight roofs, steel doors, and port-hole windows they were ideal for such uses; they were fireproof, warm and, because of the rigidity of their construction, could easily be transferred from place to place.

The smokestack was of excellent quality steel. It was cut off in one piece and sent to the fabricating shop where it was rolled flat into sheet metal. As such it was put to many uses. A few stacks were retained as stacks in new construction work. Some were dismantled, rolled into sheets and reshaped as hoods for carrying away steam and noxious gases at forges.

With the top of the vessel clear, cutting of the decks started. The schedule was so arranged that by this time all the men who had been working below loosening pipes, removing electrical fixtures, and unbolting machinery had left. Thus another potential accident risk was eliminated. The decks were cut off in large squares or rectangles. Once free, they revealed the entire interior.

Each vessel contained approximately 1000 tons of scrap steel in her hold. In most cases this had been so shaken by the sea journey that it had settled into a tangled mass difficult to handle. It was often necessary to tackle an individual piece from many angles before it could finally be dislodged. In some cases it was necessary to cut away portions of the scrap to lift it.

After the cargo had been unloaded the auxiliary machinery was removed. Condensers, pumps, dynamos, etc., were not cut free by the torches;

FOURTH instalment of the Ford Motor Co.'s own narrative of its scrapping of 199 surplus warbuilt ships from the shipping board. Previous instalments appeared in issues of Aug. 9, 16, and Sept. 6.

instead they were unbolted from their foundations and lifted out intact. Excess coal contained in the ships' bunkers was unloaded, along with such other things as might be contained in the hold. Bulkheads were cut free at the ship's sides and lifted out, the smaller ones in one section, the larger in two.

In 1927 a vessel made only two moves once it was tied to the main dismantling dock: The first was to the "big hook" and the last to the floating drydock: Although the main engine weighed approximately 75 tons and the boilers more than 30 tons each it took only an hour and a half to remove them. The huge crane not only lifted them from the boats but also swung them in an 180-degree arc to the flat cars which conveyed them to the storage ground.

Many of the lakers carried engines and boilers from the submarine-type vessels as cargo.

With the power plant out, a vessel was moved back once more to its original position. It now resembled some huge, nightmarish canoe with its gaunt sides and empty interior. Torch and crane stripped the sideplates into ribbons. The bow, with its heavy supports and reinforcements, presented a difficult problem. These had to be cut through before removal.

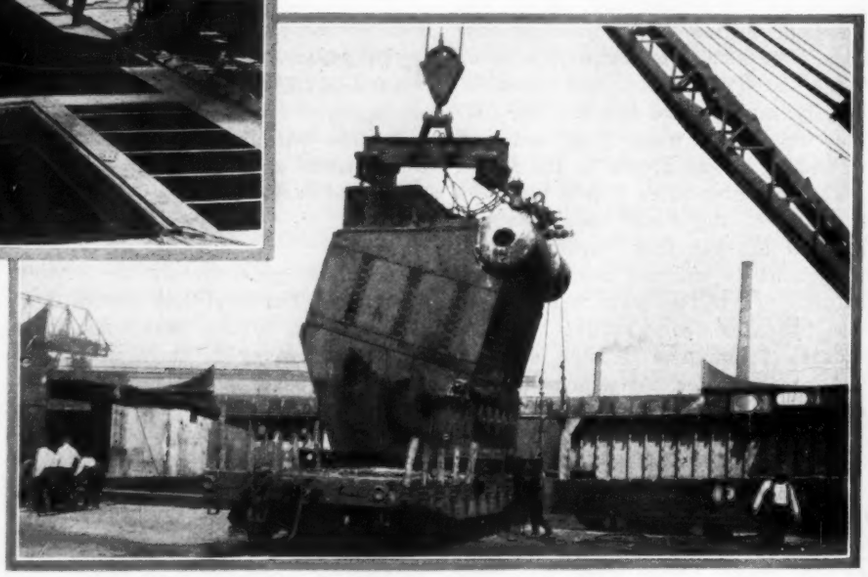
The shaft tunnel casing was cut away by torch, but the shaft propeller was removed in sections by merely uncoupling the flanges. Horizontal blades on most of the propellers had been cut away before the vessels started the trip to Fordson, so that they would not serve as a drag in the water. What remained of the propeller was lifted out whole. The rudder post was cut through at the bottom; at the top two small sections of plate were left fast to the post for facility in handling. The sideplates were cut down to approximately 3 feet above the water line.

With a ship stripped virtually to the tank top, it took its last water journey. It was towed a few feet to the floating drydock, where the double bottom was lifted clear of the water. Most of the double-bottom sections were lined with concrete, a precaution taken when the ships were built to protect the metal from such water as would accumulate in the hold. It was necessary to remove this concrete where the cutting was to be done. Small sections of plate were cut from the tank top across the beam of the ship just large enough for men with pneumatic drills to be able to chip out the concrete in 3-inch channels.

Burners followed those men, and cut the double bottom into sections approximately 6 feet wide. The length of the sections varied according to the part of the ship they were taken from, the bow and the stern naturally being smaller than the midship portions. The length of the midship sections was about 43 feet 6 inches. After being cut the double-bottom sections were lifted from the drydock, loaded three deep on flatcars and taken to the storage yard where they awaited their turn at the open-hearth furnaces.

In those double bottoms where oil had accumulated, notably in the ships of the submarine-type, additional difficulties were encountered. No matter how thoroughly the double-bottom tanks were pumped a heavy coating of oil would remain over the whole inside surface, and use of the torch would inevitably result in a disastrous fire. This necessitated first cleaning these double bottoms by a patented process, a slow and expensive undertaking. Oil thus removed, however, was salvaged.

Large quantities of "clean steel" were salvaged from ships, "clean steel" being that which could be used direct in construction and other work without being put through the furnaces. This was unloaded upon the



Engines, lifted out intact after deck plates were removed, were salvaged for use in Ford plants at home and abroad. Marine boilers, carefully salvaged, have been shipped for service in Belgium and France

main dock, where a crew of men with pneumatic air guns knocked off the rivets. The clean steel was then sent to a special stock yard. The rivets and broken bolts were melted for their metal. Other steel was loaded on flat cars from the ships and taken immediately to the storage yards.

Approximately 1050 men were employed in the dock dismantling operation in 1927; and about 1600 in 1926.

Steel totaling 216,532 net tons was recovered from the 181 ships dismantled, 144,532 tons coming from those scrapped at Fordson and 72,000 tons from those taken apart at the East coast shipyards. Large quantities of the steel were used direct in new construction work. Of that sent to the furnaces, approximately 88 per cent went to the open-hearth building. The remainder, too large and too heavy for the open hearth's cutting equipment, went to pig-casting machine.

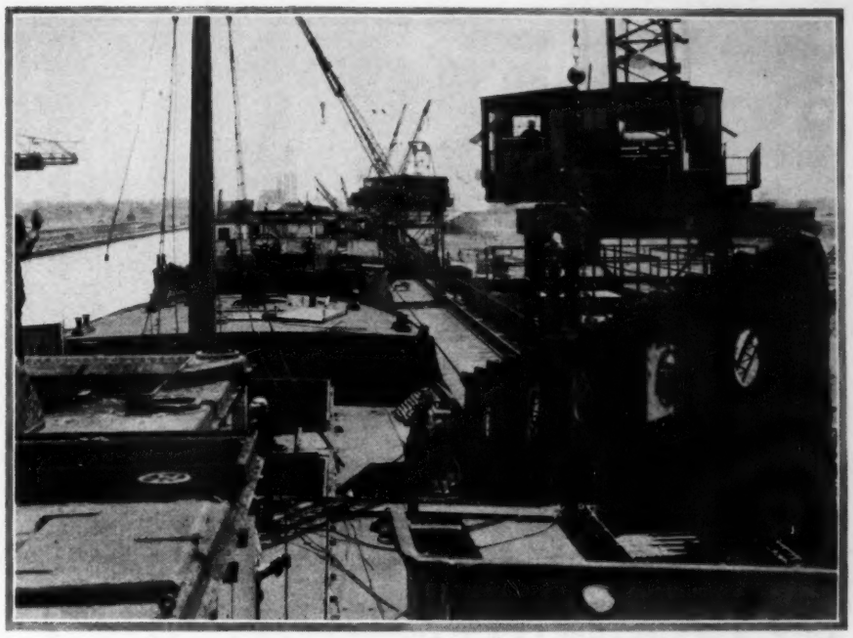
During the period of dismantling, the open hearth and pig cast obtained their scrap directly from the dock, 35 to 45 carloads being hauled to the furnaces each day. This method saved handling the scrap in and out of storage. The furnaces, however, could by no means accommodate all the metal as it was taken from the boats, and great piles were stored.

By the end of 1927 the open-hearth furnaces had melted 39,935 tons of ship metal, and were at that time using about 6000 tons a month. Indications were that it would be 1929 before the last of it was melted.

Metal sent to the pig-casting plant, usually great keel sections, was cut by torch into pieces weighing 6000 pounds or more each. These chunks were melted by being suspended in ladles of hot blast-furnace metal. It was found that about 6000 pounds of ship metal could be used efficiently with 75 tons of iron. About 600 tons of ship metal a month was being so converted early in 1928.

At the open hearth, ship metal of large size was cut to charging-box size by the steam hydraulic shear, which had a rated pressure of 1000 tons and a cutting capacity of 225 to 300 tons in 24 hours. Smaller stock was cut by a mechanical shear capable of disposing of about 120 tons in a 24-hour day. Two small plate shears and an alligator shear completed the cutting equipment.

The larger ship stock was unloaded from the flat cars by crane and magnet on a slat conveyor controlled from the operating station of the 1000-ton shear. This conveyor delivered the stock on the shear's V-shaped anvil. The conveyor was so balanced that its discharge end could be sunk by motor to a point where it would not interfere with the stock on the anvil.



Section of bulkhead being removed with a crane at one of the disassembly positions

The stock was crushed with the wedge-shaped rear portion of the shear head. First the conveyor moved it forward until it projected over the forward edge of the anvil. Then the shear head descended, cutting the crushed stock away with its forward portion (which was the blade), while the wedge-shaped rear portion crushed the stock on the anvil.

Loading Into Charging Boxes

A discharge conveyor delivered the cut stock into charging boxes placed on two cars holding eight each. The cars were moved backward and forward beneath the edge of the conveyor by a control located in the conveyor operating station. A crane lifted four full boxes at a time and elevated them to the charging floor, placing them directly on cars which were hauled by electric locomotives.

Clean steel taken from ships included girder, sheet, channel, angle, flat bar and round stock. From the LAKE WINONA, dismantled in 1927, 337 tons of clean steel was salvaged, divided roughly as follows: Plate, 247 tons; channels, 71 tons; angles, 19 tons. This is a fair average.

Shell plating, deck plating and ceilings furnished large sections of clean steel; smokestacks, bulkheads and superstructure all contributed. Rivets were knocked out at the dismantling dock, after which the sections were conveyed to a special storage yard to await use. In reclaiming the steel, interesting methods were used.

It was found desirable to plug the rivet holes for many of the purposes to which the steel was put. This was accomplished originally by welding. Later a special machine was installed for plugging the holes with steel slugs; and a 50-ton "bull riveter" used.

Four men were required for the operation of the machine, the capacity varying according to the size of the material and the number of pieces to be handled. The machine was run from a roller trackway on an overhead crane and could be swung into any position desired. The various sized pieces of material rested on horses at a convenient height.

One man, who controlled the movements of the machine, swung the jaws over the rivet hole in which another workman had previously placed a steel slug corresponding to the size of the hole. Steel burrs taken from various punch presses were advantageously used in this way.

Another workman controlled the actual operation of the machine. One lever regulated the air which opened and closed the jaws which pressed the slug into the hole, flattening it on each side by the application of a pressure of 50 tons. Another regulated the minimum size between the jaws; by gradually closing this and with a series of thrusts the slug was forced into the hole and expanded firmly.

The excess metal was later trimmed off and after painting it was difficult to detect the repair.

A hydraulic butt-welding machine was used to weld sections of I-beams of the same size together. These were usually fabricated to the exact size desired for a certain purpose.

Pipe was straightened in this machine, then welded into suitable lengths for shop use

The beams were taken from the ships in varying lengths. Welding the shorter pieces together into a desirable length saved cutting longer pieces.

The machine was capable of handling material of all ordinary sizes of structural steel. Its surface welding capacity was 64 square inches; and some of the larger pieces required 100,000 amperes or more. The two pieces to be welded together were squared on the ends and placed in the machine by an overhead crane.

They were then securely clamped into place on the moveable carriage, the operation of which was controlled by hydraulic pressure. When the current was turned on, the two ends were brought together under pressure forming an arc which thoroughly fused the two sections into one piece, strong in every way as new material.

Seventy-five per cent of the company's channel iron needs at the Fordson plant were being supplied with material from the ships early in 1928. In angle irons the proportion was approximately the same. In plate about 95 per cent of the stock was coming from the ships. "Strongbacks" from the hatches were used as I-beams for balconies.

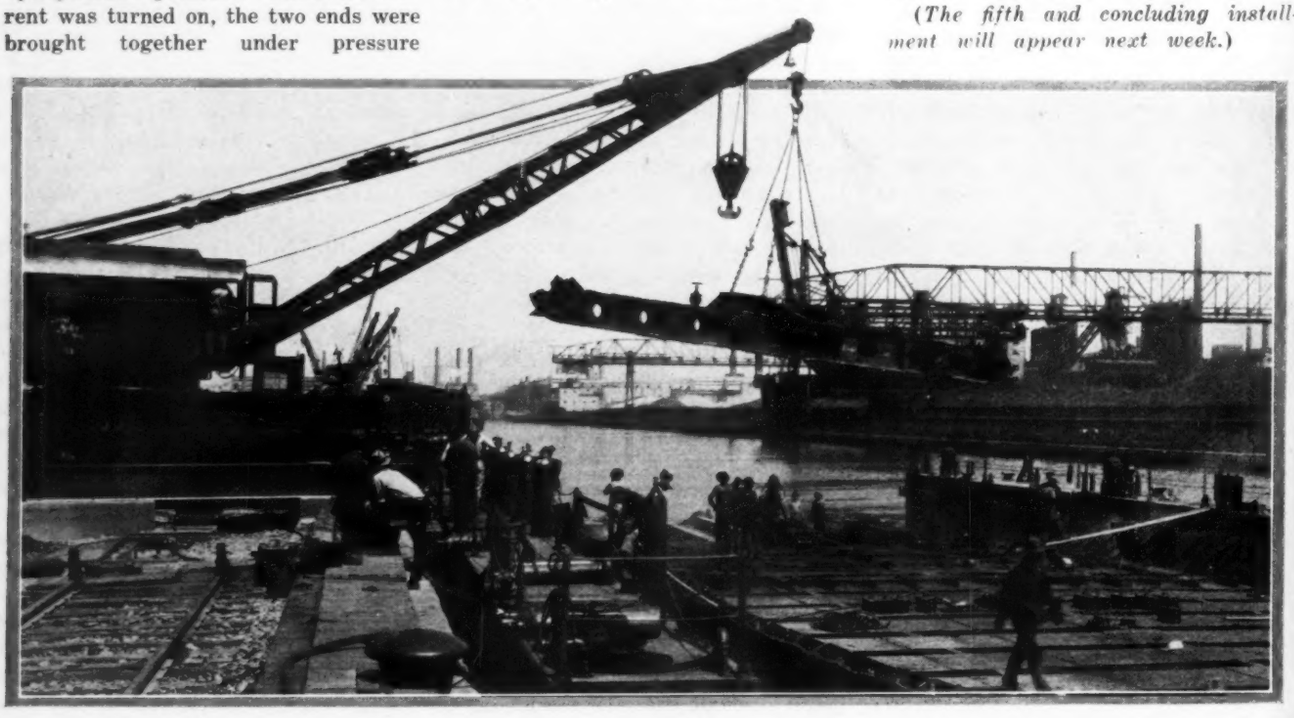
Rudder plates were used as liners in gondola-type railway cars belonging to the company. They represented a saving of $30 a car over the liners formerly used, and an increase of 200 per cent in durability. Ship plate was used in the construction of coke-oven chutes. Machine steel from boat davits, steering gear, etc., was rerolled and put into various uses. Boiler plate was rerolled into ⅛-inch stock for production purposes.

Sections of tail shafts approximately 8 feet long were put into pipes along with coke and charcoal and annealed. This generally took from 12 to 16 hours, depending upon the quality of steel required. It was removed, tested, and then heated sufficiently for forging. By means of a huge hydraulic press it was forged to stock 2½ inches square or 3 inches square. Metal thus reclaimed was of exceptionally high quality and was used for tool steel.

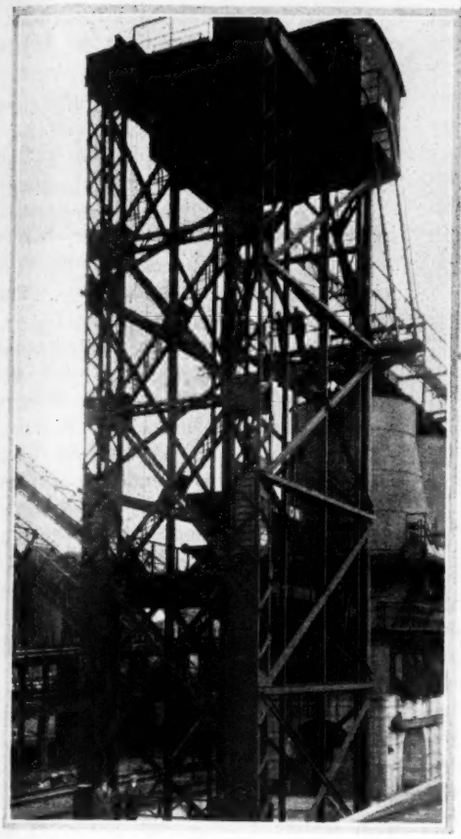
Some of the ship plate was rolled to desired thickness and stamped or forged into parts for the tractor and the Model T car. Among the parts thus made were clutch lever (forging); steering gear dash cover plate; connecting rod (forging); tractor draw bar extension (forging); engine pan, right and left; frame side, right and left; and toe board riser, right and left.

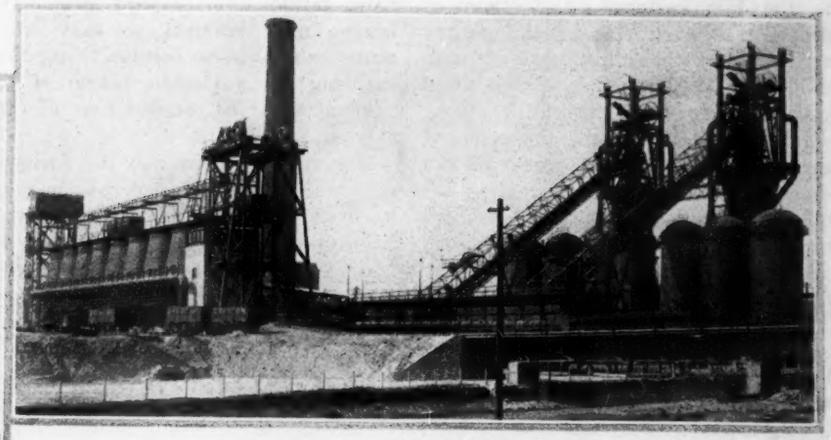
About 15 tons of nonferrous metal was recovered from each ship. Babbitt was remelted, reworked to standard formula and used as production stock. Brass bars were rerolled and sent to stock for use where needed. Copper bars were rerolled. Some were used as bus bars by the electrical department. Lead was recovered from batteries and pipe. Tin came from ventilators and other sources. Bronze was rerolled into sheets and bars.

(The fifth and concluding installment will appear next week.)



In the final stage of disassembly sections of double bottoms were cut from the hulk while in dry dock





Storage bins in the stackhouse are of steel construction. The gates are operated by compressed air

Calcining Kilns Serve Modern Skip-Filled English Furnaces

By Joseph Horton

TOWARD the end of the war officials of the Stanton Ironworks Co. Ltd., near Nottingham, England, realized that to meet postwar competition in the world markets necessitated considerable reorganization and improvements. The chief products of the company at that time were coal, pig iron and cast iron pipe. It was considered that economies could be obtained by bringing under one control a larger output and with this in view the works of the Holwell Iron Co. were purchased in 1918, and those of James Oakes & Co. in 1920.

At the Holwell works, near Melton Mowbray, are five blast furnaces, each with a capacity of 1000 tons a week. This plant was reconstructed in 1917 to 1919. The Holwell foundries are modern and produce 1000 tons of cast iron pipe and specials a week. The Oakes works consist of foundries only with a capacity of 1200 tons a week.

The rights for the manufacture of centrifugally-cast iron pipes under the DeLavaud patents, and of concrete pipes under the Hume patents, were secured in 1920 and plants were erected to carry out these processes. These plants, which began operating in 1921, were the first in the world built to manufacture under these patents on a commercial scale. To date over 3000 miles of spun iron pipe have been dispatched from the Stanton works for markets at home and abroad, and over 600 miles of concrete pipe for the home market.

At present the total capacity of the various works now controlled by this company is 1,500,000 tons of coal, 450,000 tons of pig iron, 300,000 tons of cast iron pipe and 60,000 tons of concrete pipe annually. Before the reconstruction the Stanton works included two units, one of four stacks and the other of five stacks, both built about 1870. All were of the open-top type and had a capacity of 400 tons a week each, using about equal portions of coal and coke as fuel.

Existing Sites Used

After considering various schemes, and bearing in mind the high cost of plant prevailing, it was ultimately decided to use the existing sites and build two modern furnaces on the ground occupied by the four-furnace unit, and three modern furnaces on the site of the five-furnace unit. This scheme enabled considerable portions of the existing plants to be retained. It was important that the pig iron requirements of the foundries should not be interrupted and the scheme therefore had to be carried out in stages.

Eight calcining gas-fired kilns of the Gjers type, fitted with induced draft, are placed in a line at the back of the two furnaces. The ironstone to be calcined is conveyed to the works from the company's quarries in 20-ton self-discharging wagons, and these are raised to the top of the kilns by a wagon hoist, run by gravity along the top and, after discharge, lowered by a wagon drop.

The kiln shells are built of mild-steel plates ½-inch thick. The top is 51 feet 10 inches above the entrance rail level, and is stiffened by substantial steel angle rings. The steel shells are built on a concrete foundation, which permits calcined stone to be discharged into 20-ton wagons running on rails at yard level. Owing to the height at which the kilns discharge the operator works on a platform, carried on a gantry, running over the top of the wagons. The platform is driven through gearing by a 5-horsepower motor.

The gantry over the top of the kilns consists of a single track running between the hoist and the drop at a gradient of 1 in 80. The rail bearers rest on a steel beam which is carried by substantial brackets riveted

to the kiln casings. A footway is provided at each side of the gantry and between the kilns, covered with mild-steel checker plates and fitted with suitable steel handrail.

During the winter months some of the ores arrive at the works in an extremely sticky condition, and to enable these to be readily discharged into the kilns a platform has been provided so that a man can ease the material by poking from the wagons.

The wagon hoist has a capacity of 35 tons, and is capable of raising its load from ground level to the top of the kilns in 30 seconds. The framing is constructed throughout of mild steel and is strongly braced to withstand all combinations of stresses. The hoist mechanism is placed at the top, and consists of a drum, driven through spur reduction gear by a 100-horsepower motor.

The wagon drop is of the gravity type, and is arranged at the opposite end of the gantry to the hoist, for lowering the wagons after discharge from gantry level to yard level. The brakes are arranged so that effort must be applied to release them, thus ensuring the automatic action of the brakes and the suspension of the cage at any point.

Between the kilns and the furnaces a range of ironstone and coke bunkers is located. The calcined and other ironstone, which is charged into the furnace as received from the quarries, is conveyed to the top of the bunkers by an incline, at a gradient of 1 in 25. The gantry for the coke bunkers is at a lower level than the gantry for the ironstone bunkers. This arrangement had to be made owing to the weak nature of the cokes available, that is, they crush badly if put into bunkers of any large capacity.

Ore Conveyed to Skips

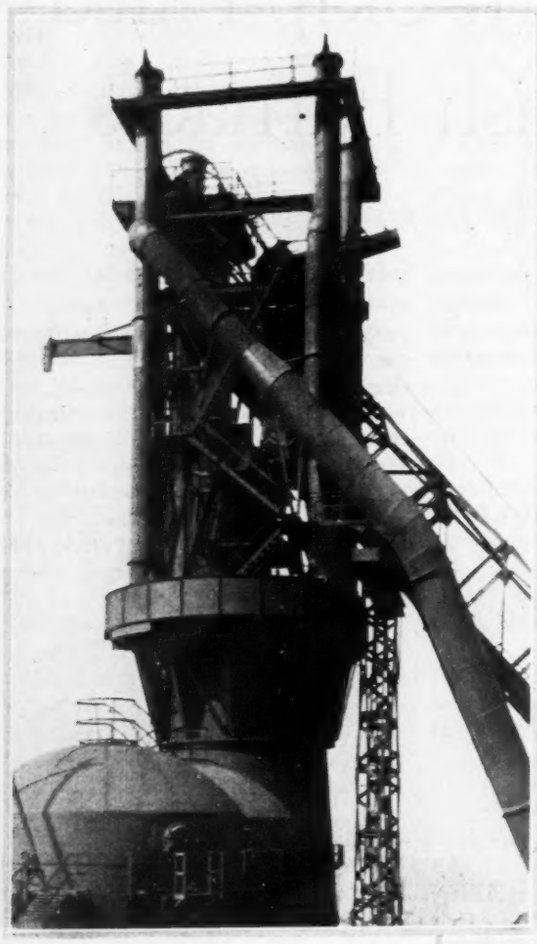
Two electrically-operated larry cars of 5 tons capacity are arranged to operate beneath the ironstone bunkers, from which they collect the ore charge, which is conveyed to the skips and automatically discharged. The coke from the small coke bunkers is discharged direct into the hoist skips. The gates on the ore bunkers are operated by compressed air cylinders, and the control is so arranged as to be readily operated by the larry car drivers. The gates for the coke bunkers are hand controlled by the larry car drivers. After considering various methods of charging, double skip inclines with a double bell and revolving distributor on the furnace top were chosen. The angle of the hoist inclines is 35 degrees, and the length of travel 235 feet. The hoists are operated by 120-horsepower motors geared to drums of 6-foot diameter. The maximum speed of hoists is 5½ inches a second.

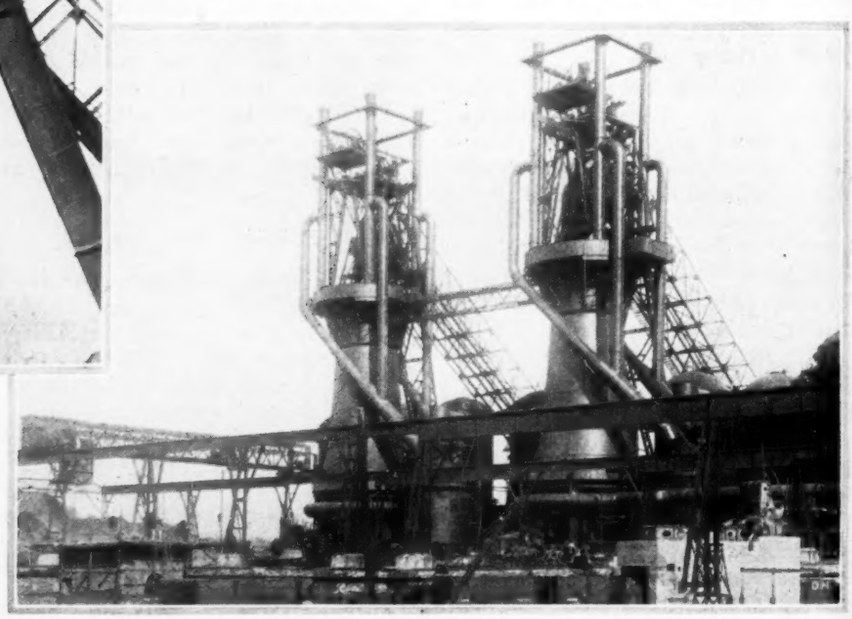
The hoist bridges of mild steel plates and rolled sections are supported on concrete foundations at the bottom and on an independent trestle at the top. The skips have a capacity of 4 tons of ore and 2 tons of coke.

The motor for operating the furnace top gear is 10 horsepower. The large and small bells are operated independently by steel wire ropes reeved over conveyance sheaves on the charger bridge to the sealing balance weights located inside the skip hoisting machinery house at ground level, and thence to the operating drums. Each drum is driven by a 10-horsepower motor, interlocked with the control mechanism of the charger and distributor motors. The operation of the hoist is effected by push button controls, conveniently placed for the larry car drivers.

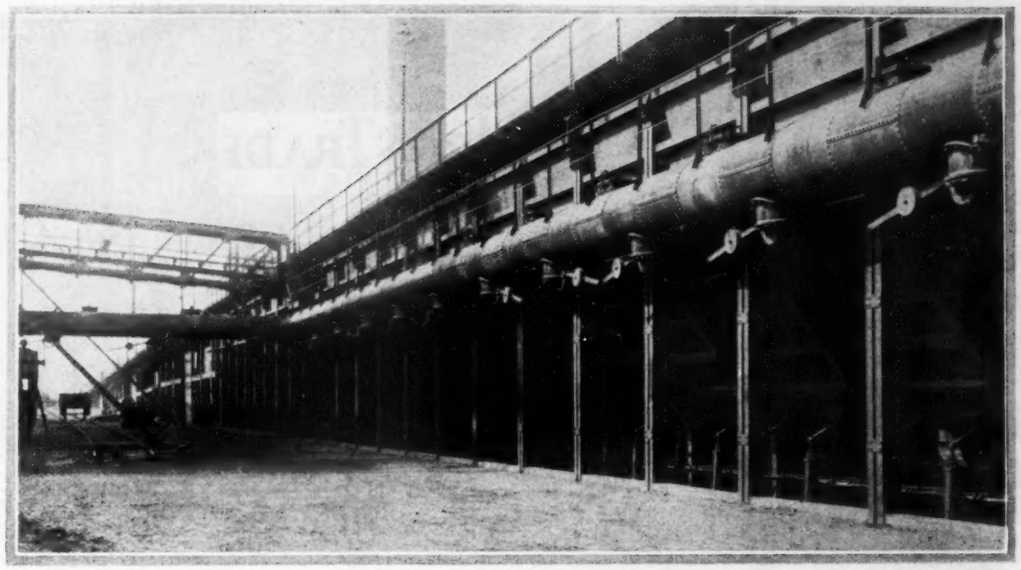
The furnace shells are 18 feet 2 inches in diameter at the top, 31 feet in diameter at the bottom and 57 feet high above the mantle. They are made of mild steel plates throughout, with double riveted lap joints in all tiers except the vertical joints in the first and second, which have butt joints with treble riveted straps inside and outside. Each shell is supported by a circular steel entablature girder on the top of eight columns built of heavy rolled steel joists and plates.

The bosh casings are 18 1/3 feet in diameter at the bottom, and 25 1/3 feet in diameter at the top, and made up of ⅝-inch steel plates, butt jointed with double covers. The plates are in one length vertically with flush





General view of top rigging showing arrangement of uptake and downcomer pipes. The crane runway shown at right serves the pig iron beds



General view of the modern stacks from the skip side and the eight gas-fired kilns which are used for calcining the iron-stone

rivets on the outside and there is a water trough provided at the bottom so that bosh cooling by means of sprays can be applied readily if found desirable.

The hearth jackets, 17 feet 10 inches diameter and 15 feet deep, are made of 1¼-inch steel plates, all butt joints with double plate covers, with suitable openings provided for eight tuyeres, tapping hole and slag notch. The circular hot blast main, 3½ feet in diameter, is built of 5/16-inch plates, lap jointed.

The furnaces are 76 feet 10½ inches high from hearth level to platform level. The hearths are 11 feet, the boshes 19 feet and throats 13¼ feet in diameter. Gas is taken from the stacks by four 3-foot diameter vertical tubes fixed round the top of the casing, each being of sufficient height to be used as a candle, and having a suitable valve controlled from the ground. These valves also act as explosion doors. From the sides of these four vertical gas tubes, 3-foot diameter downcomers are led down the side of the furnace in pairs, each pair being merged into one tube of 4½-foot diameter, which is connected to the dome of the dustcatcher.

The dustcatcher for each furnace is 20 feet in diameter, supported on joist girders and suitable columns fitted with butterfly valve, four explosion doors and dust outlet valve at the bottom. The connection between the dustcatcher and gas main is 6 feet in diameter. A turbo blower, with a normal output of 20,000 cubic feet of free air a minute against 7½ to 10 pounds pressure, and 28,000 cubic feet up to 9½ pounds is provided for each furnace.

The iron is cast into pig beds, which are spanned by a 7½-ton electric crane equipped with suitable magnets for lifting the comb of pig iron, which is conveyed to a breaker at one end of the beds. The slag is cast into 5-ton ladles and conveyed to crushers, where it is converted into road stone of various sizes.

Seeking Standards for Leather Beltings

The American Engineering Standards committee has been asked by the American Society of Mechanical Engineers to provide definite standards for leather beltings to serve as guides to industrial purchasers. Since belting valued at about $30,000,000 is being bought each year without accurate knowledge of its stability for specific conditions or proper methods of maintainance, it is stated that this action has become necessary.

Standards for all types of belting used in the oil industry have been established by American Petroleum institute, which estimates that its specifications and recommendations for care and usage increase the service value of belting by 25 per cent.

Swedish Iron Ore Makes Production Record

The record figure of 9,660,977 metric tons, an increase of 14 per cent over the 1926 total of 8,465,914 tons and 7½ per cent over the 1913 total of 7,475,571 tons, was reached by Sweden's 1927 iron ore output, Assistant Trade Commissioner Basil D. Dahl, Stockholm, informs the department of commerce, Washington.

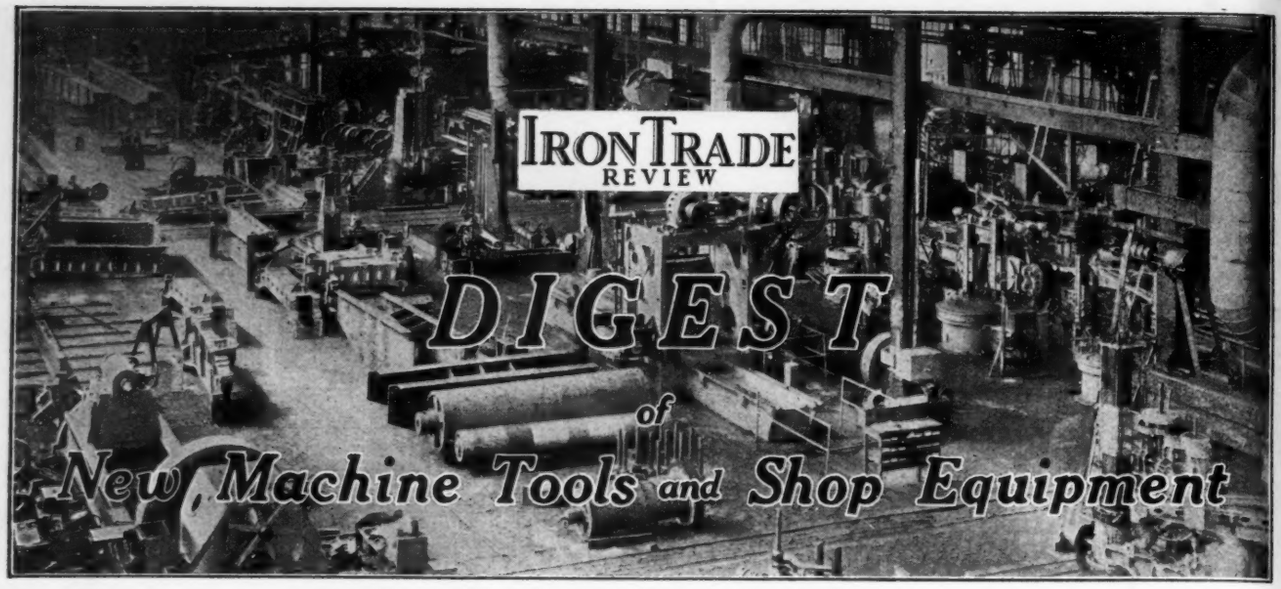
The increase, it is said, is to be attributed to the sale of iron ore to foreign countries, as domestic consumption is considerably less than before the war. Exports of iron ore during 1927 reached a new high figure of 10,700,000 tons. The excess over production was supplied from stock piles.

National Steel Car Co. Shows Gains

The annual statement of the National Steel Car Corp. of Hamilton, Ont., for the fiscal year ending June 30 shows an operating profit of $534,849 as compared with $288,765 for the previous year. The volume of business produced this year was approximately 27 per cent in excess of last year's production. About 10 per cent of this was accounted for by the increased equipment orders, which included not only standard equipment for the railways, but also street car rolling stock of special design. The balance of the increased production about 17 per cent was derived from the manufacture of material other than rolling stock. The net working capital shows an improvement having increased from $1,016,405 to $1,079,958.

Milwaukee Employment At Higher Level

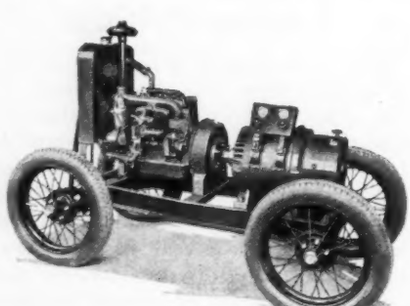
Factory employment in Milwaukee on Sept. 1 was nearly 100 higher than on Aug. 1, which marked the highest peace time payroll in the industry of the city. The number at work in 50 representative industries was 37,385, which compares with 35,361 at work on Sept. 1, 1927. The skilled trades divisions and metal trades continue to have the largest demand for labor. There is a scarcity of machinists, machine hands and molders, official reports say.



Milling Head Attachable to Thread Miller

No. 233

Pratt & Whitney Co., 111 Broadway, New York, is manufacturing a new milling head, designed for internal milling and hobbing, for use on thread millers made by the same concern. The combination thread miller and milling head makes a complete machine for external and internal work, it is claimed. The base of the milling head is dovetailed to fit on the cross slide with the external cutter head while the head itself is locked in position on the cross slide by a bolt lock equipped with check nuts, which fits into a tapped hole in the base casting of the external cutter head. This arrangement permits the use of the cross slide handwheel for the transverse movement of the external head and internal head simultaneously. Power is supplied to the internal head by a gear mounted on the cutter spindle shaft of the external head, through two intermediate gears to the cutter spindle of the internal head. Sight feed oilers provide continuous lubrication for this gear train.



No. 234—Portable arc welder

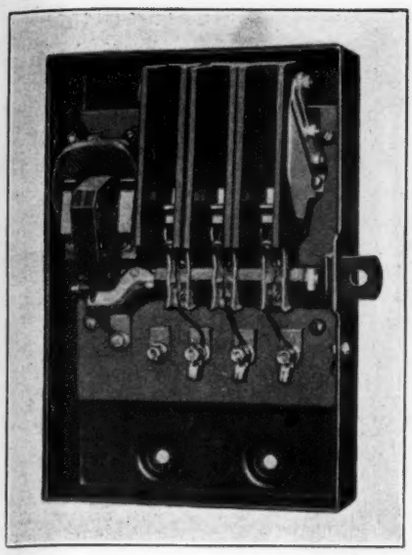
Portable Arc Welder Is Powered by Gasoline

No. 234

Fusion Welding Corp., 103rd street and Torrence avenue, Chicago, has designed a portable arc welding unit driven by gasoline motor. Two sizes are made, a 200-ampere unit driven by a 23-horsepower motor and a 300-ampere size powered by a 40-horsepower motor. The outfit is designed for use in the field on such jobs as pipe-line welding. By use of a single brush-shifting control calibrated in amperes and provided with a set screw, a number of different amperages may be obtained. The welder is said to require approximately 1

Iron Trade Review's Calendar of New Equipment

No.	Item	Builder	Comment	Date Described
207.	Grinder and snagger	United States Electrical Tool Co.	High speeds; direct or alternating current	Aug. 16
208.	Control panel	General Electric Co.	Used with motor-generator battery charger	Aug. 16
209.	Signal relay	General Electric Co.	Warns of power failure or voltage drop	Aug. 16
210.	Journal turning lathe	Niles Tool Works Co.	For double quartering and crankpin turning	Aug. 16
211.	Cable clip	Eureka Metal Products Corp.	Two fully grooved jaws	Aug. 16
212.	Ladle gearing	Whiting Corp.	Ball bearings; cast-steel housing	Aug. 16
213.	Connecting rod borer	Niles Tool Works Co.	For boring and facing operations	Aug. 16
214.	Electric motor	Allis-Chalmers Mfg. Co.	Totally enclosed and fan-cooled	Aug. 23
215.	Car wheel lathe	Niles Tool Woks Co.	Improved method of chucking	Aug. 23
216.	Disk sander	United States Electrical Tool Co.	Portable electric; ball bearing construction	Aug. 23
217.	Vertical-spindle grinder	Hisey-Wolf Machine Co.	Vertical, horizontal and double slide adjustments	Aug. 23
218.	Electric handsaw	Wappat Gear Works Inc.	Equipped with safety guard; 2-inch cutting capacity	Aug. 23
219.	Strip coiler	D. A. Clark Co.	Straight-line drive arrangement	Aug. 23
220.	Electrode holder	Fusion Welding Corp.	Minimizes arcing and overheating	Aug. 30
221.	Pneumatic riveter	Hanna Engineering Works	Exerts 1-ton pressure; weighs 15 pounds	Aug. 30
222.	Steam valves	Jenkins Bros.	250-pound working pressures	Sept. 6
223.	Roll lathe	Mackintosh-Hemphill Co.	Equipped with roller bearings	Sept. 6
224.	Hydraulic punch	Hydraulic Tool Works	Light weight; hand operated	Sept. 6
225.	Milling machine	Brown & Sharpe Mfg. Co.	Vertical-spindle type; belt or direct-motor drive	Sept. 6
226.	Riveting hammer	Ingersoll-Rand Co.	Made in four sizes with two types of handles	Sept. 6
227.	Sand digger	Clark Tructractor Co.	9-foot bucket mounted on gasoline tractor	Sept. 6
228.	Arc welder	Lincoln Electric Co.	For welding heads of tanks	Sept. 6
229.	Floodlight	Prest-O-Lite Co. Inc.	For attaching to acetylene tanks	Sept. 6
230.	Metal punch	Whitney Metal Tool Co.	Two sizes; deep-throat design	Sept. 6
231.	Air hoist	Chicago Pneumatic Tool Co.	Increased speed; four-cylinder air motor	Sept. 6
232.	Sandblast helmet	Pangborn Corp.	Ventilation controlled by operator	Sept. 6
233.	Milling head	Pratt & Whitney Co.	Internal milling attachment for thread miller	Sept. 13
234.	Arc welder	Fusion Welding Corp.	Portable; driven by gasoline motor	Sept. 13
235.	Magnetic contactor	Cutler-Hammer Mfg. Co.	Automatic control for lighting and power circuits	Sept. 13
236.	Blowers	P. H. & F. M. Roots Co.	Roller and ball bearings incorporated on all models	Sept. 13
237.	Regulating rheostat	Cutler-Hammer Mfg. Co.	Speed control for fractional-horsepower motors	Sept. 13



No. 235—Magnetic contactor

gallon of gasoline per hour of operation. The unit is furnished mounted on four wheels equipped with pneumatic tires, as shown in the accompanying illustration, or on smaller iron wheels.

Many Safety Features on New Contactors

No. 235

Cutler-Hammer Mfg. Co., Twelfth and St. Paul avenue, Milwaukee, recently has placed on the market a new alternating-current magnetic contactor designed for automatic control of lighting and power circuits and other miscellaneous applications. Hammerhead type magnets with self-aligning armature, hardened steel bushings, tin-dipped solid copper contacts, magnetic blowouts and chimney-type arc shields are some of the outstanding features of the device. Two or 3-wire control can be used; with 2-wire control, low voltage release is provided and with 3-wire control, low voltage protection is provided. Two, 3 and 4-pole types are made with ampere capacities ranging from 20 to 150 amperes. The contactors are supplied mounted in a split enclosing case, as shown in the accompanying illustration, or on a slate panel for switchboard mounting.

Equips Blowers with New Types of Bearings

No. 236

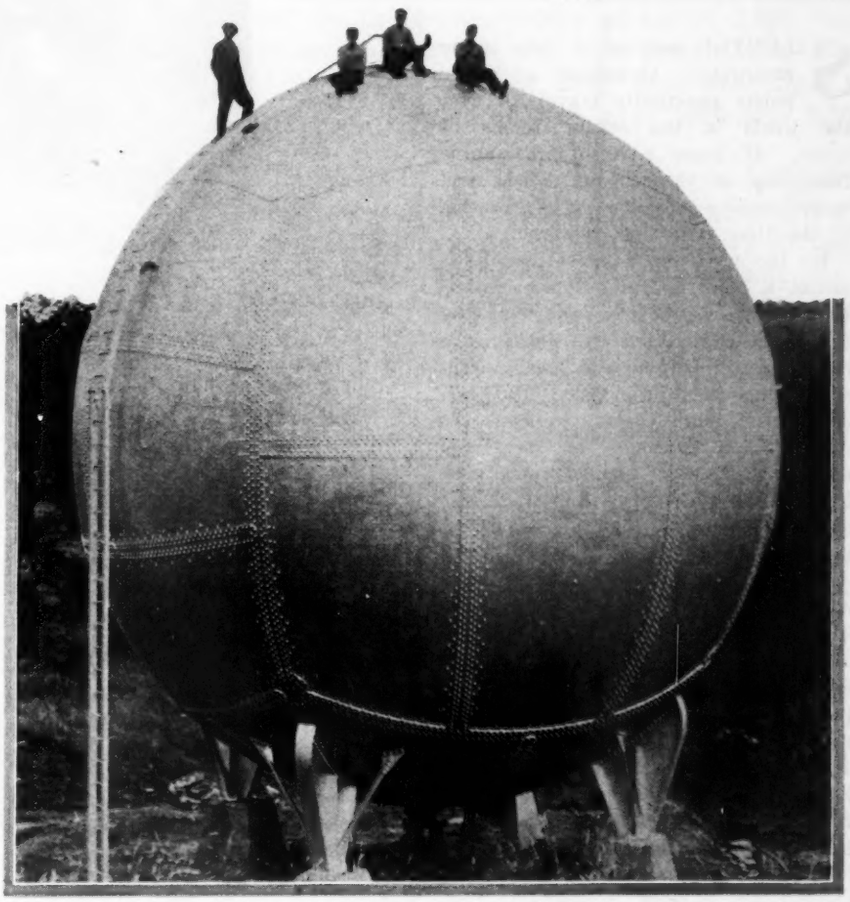
P. H. & F. M. Roots Co., Connersville, Ind., recently has incorporated ball and roller bearing design on its line of blowing equipment. The larger models of blowers are furnished with heavy-duty roller bearings and the smaller units with roller or ball bearings depending upon specifications. The bearings are said to be well-lubricated, ample space being allowed around the bearing for a sufficient supply of lubricant and provision being made for forcing the lubricant through the bearing from one side to the other. The use of the new bearing design on the blowers is said to offer new possibilities for direct connection to small motors with less horsepower to obtain increased capacity, operation with higher efficiency by permitting the use of more closely fitting cases and the obtaining of greater capacities with conservative speeds.

Regulating Rheostat Is Designed Compactly

No. 237

Cutler-Hammer Mfg. Co., Twelfth street and St. Paul avenue, Milwaukee, recently has designed a new regulating rheostat to be used as a speed control for fractional-horsepower motors. The device is of the circular-plate type. The mechanism consists essentially of a cement-imbedded resistance unit, with brass contact buttons protruding, and a contact arm which moves over the buttons, varying the resistance.

Steel Sphere, 37 Feet in Diameter, Equalizes Gas Pressure

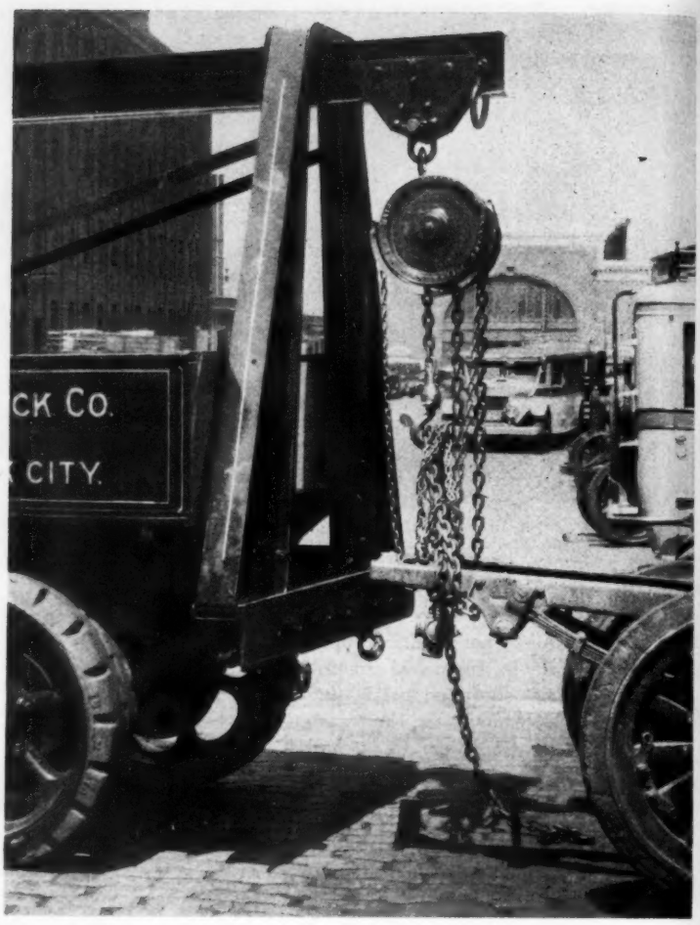


THE Worcester, Mass., Gas Light Co. is completing its first all-steel sphere for the storage and distribution of gas in the town of Shrewsbury, Mass. The ball is 37 feet in diameter, set on four cement blocks and is constructed of heavily riveted steel plates, treated to prevent corrosion.

Two large pipes leading up from the ground allow the gas to enter and leave the sphere, and the flow is controlled by a governor house and machinery located nearby. Pressure is equal at all points within the sphere and capacity depends on the pressure flow. A ladder is suspended from the side and is movable, enabling workmen to climb on top of it at any point. Gas will be pumped into it from the main station at Worcester, Mass., six miles away.

LARGE USES of STEEL in SMALL WAYS

Chain Hoists—124th Article



SILENTLY waiting to help in an emergency, thousands of chain hoists constantly travel all over the world in the engine rooms of ships. If some part of an engine fails, one of these chain hoists will make repairs possible in a fraction of the time otherwise required.

By the term chain hoist usually is meant a hand operated hoist consisting of two sprockets, one carrying the load chain and the other the hand chain, with suitable gear mechanism connecting the two. An average size chain hoist weighs 150 pounds, and is made of steel and castings in about equal proportions, by weight. Leading manufacturers estimate 60,000 to 75,000 chain blocks are manufactured in this country each year. The minimum annual consumption, therefore, is close to 2500 tons of steel.

Chain hoists are used in many industries, but the most rapid increase in demand recently has been from the automotive industry, or from some other branch of transportation. Handling expense is reduced sometimes by having duplicate bodies for trucks, and loading and unloading the bodies on to chassis by means of chain hoists carried on overhead trolleys. It is estimated that 13 per cent of the chain hoists are used in some branch of the automotive field. The steel industry, including production and fabrication, accounts for about 20 per cent of the total output. Foundries, the oil industry and railroad shops are other large users of chain hoists.

The specifications of every ship of 8000 tons displacement or more calls for six to 25 chain hoists. The freighters which were modernized recently in the United States shipping board dieselization program each took 11 chain hoists, eight in the engine room and three for deck use. Commander Byrd's south pole ship has four chain hoists in its engine room, though the vessel is only 150 feet long.

A typical chain hoist upon a frame is made of two castings, an internal gear casting and a ratchet case casting. These support a steel shaft which carries a hand chain sprocket wheel and a load chain sprocket. Two steel straps extend downward from the upper hook crosshead, to carry the load in case other parts should "give." The hooks are made of steel forgings.

The two sprockets are connected by means of a gear train designed much like the differential of an automobile. A pressed steel pinion cage is keyed to the load sheave. This cage carries two pinions, which engage with a third, keyed to the main shaft. The hand chain sprocket also is keyed to this shaft, so that a pull on the hand chain turns a small pinion against larger pinions and these in turn engage an internal gear and rotate the load sheave or sprocket. It is an ingenious mechanism, which gives a ratio of 30 to 1 and high mechanical efficiency. The unit contains many other parts including a brake and ratchet made of stampings; chain guides of malleable iron, washers and nuts of steel ball bearings. The ratchet pawl is a drop forging held by a nickel steel spring. A stamped steel gear cover protects one end of the hoist.

Production of these various parts is on a quantity basis as the designs are well standardized and the bulk of the chain hoist output is from a relatively few plants.

THIS is the one-hundred twenty-fourth of a series of articles dealing with some of the obscure uses of steel which go far toward absorbing the American tonnage.

Among articles appearing every two weeks and not included in Vol. I containing 51 separate descriptions are:

Vacuum Bottles	*Suspenders*
Highway Guards	*Screw Hooks*
Numbering Machines	*Steel Bridging*
Joist Hangers	*Mail Boxes*
Straight Razors	*Steel Shelving*
Piano Wire	*Automobile Bumpers*
Type Molds	*Tire Chains*
Swords	*Bathroom Fixtures*
Paving Guards	*Snow Fences*
Reaction Kettles	*Stairs*
Fire Screens	*Cork Screws*
Voting Machines	*Universal Shafts*
Display Racks	*Sewing Machines*
Steel Stamps	*Lanterns*
Wire Screens	*Cleats*
Typewriter Spools	*Axes*

Editorials

Too Early To Raise the Machine Bogey

ARE there not some inconsistencies in William Green's Labor day remarks concerning labor-saving mechanization of industry? Does not the text of his speech on this point exhibit the vagaries of mind so often shown by trade union leaders in their theorizing on the future results of the wider use of machines—their evident groping for an issue, without being quite able to define it?

At once, in the same talk, they can picture mechanization as a fearful menace, and also as a gift from Providence to emancipate men and women from slavery and poverty. There is a subtle suggestion that when organized labor can control the development and use of machinery, that may be considered a blessing; when it cannot, that is a curse. The president of the American Federation of Labor said in his address in Ohio:

> "One of the chief objectives of labor is the establishment of the five-day week in all lines of industry. This great economic reform is made possible through the installation of improved machinery . . . . increasing use of power" . . . and so on.

Having declared that labor must pin its hope for shorter hours on the use of machinery and power, he went on to say:

> "If we must choose between scrapping machines and science, and human beings, we must scrap the machinery. What will happen when we reach the point of saturation? Will we eventually reach an entirely mechanical age? An age when only machines will be in demand and men will not be wanted? This can never be."

If we follow this correctly, as more and better machines and power are used, the greater is the opportunity to reduce the number of manual working hours; down to a certain point where there is no longer advantage, but positive disadvantage in mechanization. The "deadline" has not yet appeared, because we do not have a universal five-day week, nor is there serious unemployment attributable to the use of machines and power.

High productivity has enabled the payment of high wages. Simple machine operation has provided employment to many thousands of the aged and incompetent, who otherwise would be without means of support. The greatest and swiftest machine development in all history has occurred in the last decade, not bringing widespread unemployment and grief, but tremendous benefit to every one. Why raise the bogey of "an age when only machines will be in demand, and men will not be wanted?"

Ingot Record Appears a Certainty

AS EACH succeeding month rolls up a steel ingot output which is a record for that month, any uncertainty over a new full year record in 1928 is removed. During the eight months just passed, open-hearth and bessemer ingots reached the impressive total of 32,782,937 gross tons and an average daily rate of 157,610 tons. In the corresponding period of 1926, the previous record year, the eight-month total was 31,640,213 tons and the daily rate was 152,851 tons. The increase of 1928 over 1926 was 3.26 per cent.

The August total is impressive. At 4,178,481 tons it exceeds the previous record August—that of 1926—by a margin of 191,515 tons. In last August only 3,498,549 tons of ingots was produced. Since the output of September, 1927, was only 3,268,881 tons, production can suffer a big reduction this month and still be ahead. In fact, a new September record is possible.

In all of 1926 the open-hearth and bessemer tonnage was 46,597,475 tons. Thus, for 1928 to equal that production, it is necessary to make in the next four months only 13,814,538 tons. On a monthly basis this would average 3,454,000 tons per month, or on a daily basis 132,800 tons per day. During the last four months of 1926, output amounted to 14,957,262 tons, or 143,819 tons per day. But if the last four months of 1928 maintain the 3.26 per cent margin over the same period of 1926, a figure of 15,445,000 tons, or 160,800 tons per day, may be expected.

With operations starting in September at a high rate and nothing looming on the horizon to disturb production during the remainder of the year, it appears likely that 1928 will build up a total which will surpass 1926 by a margin of 1,000,000 to 1,650,000 tons.

Engine Building Never Slacker

RECENT order of the New York Central railroad for 55 locomotives is a high light of activity in possibly the most profoundly dull period the locomotive industry has ever experienced. The largest in more than a year, this

order brings awards for the first eight months, including 75 for export, up to the slender sum of around 325, a rate well under last year, when 840 were placed, and under 1921, when the total of 820 was the lowest on record.

With the pronounced trend toward heavier and more rugged and powerful locomotive equipment, average figures and comparisons in recent years have lost some of their significance. Yet, on an industry with a rated annual capacity of more than 6500, the effects of this slump are all too obvious. Not since the war has there been any real approach to this low figure. By far the nearest was in 1920 and 1922, when 3000 and 2700, respectively, were placed, and in both years export business contributed materially.

Combined with the accompanying slackness in car buying, this lull in locomotive business makes all the more notable the heavy tonnage that continues to flow through the steel mills.

Modernize Antitrust Laws, Is New England Plea

To the Editor:

I AM ENCLOSING a copy of a letter which the Structural Steel Board of Trade of New England has voted to send to the Chamber of Commerce of the United States, and also to the proper authorities in Washington. The letter is as follows:

"The structural Steel Board of Trade of New England respectfully addresses your attention to the condition of the structural steel industry in this section of the country. The operation of the Sherman law and the Clayton act is responsible, we believe, for the fact that practically no profits have been made in this industry in New England for the last five years, and that relief must be had from the operation of these statutes as construed by the courts if this industry is to survive in New England.

"This industry represents and requires a larger investment of capital than other lines of industry, is fundamental to the development of any community, proved its absolute necessity to the government in time of war, and is being completely demoralized by the operation of those statutes.

"We shall appreciate any suggestion from your Committee as to what may be done by us to aid any effort addressed to a revision or revocation of those acts or to the legislation in substitution for them."

While there have been expressions of widespread dissatisfaction with the application of both the Sherman law and Clayton act by many individuals and from all lines of industry, this is the first time, I believe, that an industry has made an open and frank appeal for relief from the application of these statutes as at present construed by our courts. We are lead to do this by the conviction that unless these statutes are amended or repealed, our industry, representing millions of dollars of investment, is threatened with disaster.

We would be the last to deny that at the time these acts were passed the country was suffering from evils which it was essential should be restrained. We do not believe that even now, manufacturers should be free to enter into agreements or combinations which would result in the public's paying an unfair price for their products. But we do believe that the manufacturer is entitled to a fair and reasonable profit and that this right should be just as firmly guaranteed and protected as that the consumer should not be forced to pay an unfair price for what he buys.

The justice,—nay, necessity, that corporations should receive a fair return for their efforts is recognized by both the federal government and the states with respect to public service corporations. The federal government has established rates and tariffs for the railroads calculated to produce a given net revenue upon the invested capital. Here in Massachusetts the state fixes the price of gas and electricity at levels which are intended to return a fair rate of interest to the stockholders and our own Boston elevated railway has been guaranteed for years a 6 per cent rate of dividends.

But when it comes to private enterprise, the attitude of our courts and lawmakers (and, indeed, the public in general) is something different again. It is quite similar to that of the spectators at a cock fight. Their only interest is to see which of the two combatants will succeed in killing off the other. And the competition within the industry is precisely that of a cock fight, whether the industry happens to be textiles, shoes, oils, coal, silk, steel or any other of an essential nature.

As the Sherman law and Clayton act are now construed, it is demanded of manufacturers of similar articles that they fight each other to the death. No friendly or cooperative act may be indulged in if as a result thereof, the article they manufacture is increased in price one mill. The result is inevitable. We are having industrial warfare carried to the point of ruination in industry after industry, and all because 30 years ago certain large groups carried their activities to a point which was harmful to the general welfare.

We submit that this situation is intolerable and in no sense what the framers of the Sherman law and Clayton act had in mind as the purpose of those acts. Those acts were intended to break down great monopolies and to prevent the forming of others and not to operate to compel the independent industries to fight each other to the death. The only alternative to that result is to drive the independents into consolidations and mergers which is precisely what the framers of the two acts in question intended to prevent.

When you build a house, you now pay the carpenters $1.375 an hour. When the Sherman act was passed you paid not over 40 cents. This increase has been brought about solely through the combined efforts of organized labor, supported by public opinion. But you are paying no more for fabricated steel now than you did then, despite the trebling of wages, due to economies in and improved methods of manufacture and the almost entire elimination of profits.

If labor is permitted, through concerted action, to raise the rates of wages to the utmost that the situation will bear, should not some way be provided so that those who pay these wages and supply the opportunity for obtaining them, should receive a reasonable return on their investment and for their own efforts?

CHARLES N. FITTS, *Chairman, Board of Governors Structural Steel Board of Trade of New England.*
Boston, Aug. 13, 1928.

IRON TRADE REVIEW

Volume 83, Number 11 — Published Every Thursday

E. L. SHANER, Editor. — *J. D. PEASE, Advertising Director.* — *F. F. LIGHT, Circulation Manager.*

Airplane Manufacture Offers Greater Field for Steel Producers. Page 629.

WHEN the Wright boys' first airplane slid down greased runways, to get enough speed for the take-off, as many readers will remember, its wood struts and frames were made bright with aluminum paint. Ash and spruce, held together with piano wire, were the mainstays of the airplane in many stages of development. But now with air transportation companies advertising the airplane as safe as the railroad train, reliance is placed on aluminum and steel alloys. How steel fits in with modern airplane production is told in the leading article. It points the way for greater use of steel.

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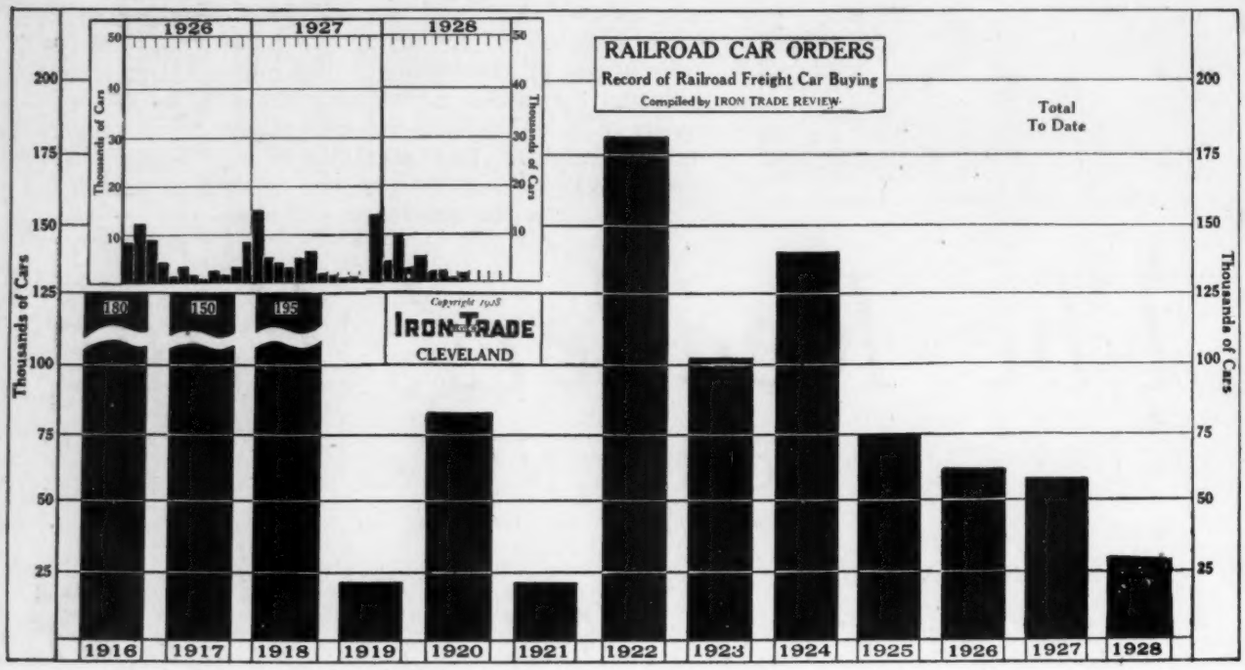
The Business Trend



Good News Comes to Equipment Industry

By JOHN W. HILL, Financial Editor

ONE of the most important recent developments of significance for the iron and steel industry was the announcement of the American Railway association edict against the use of wooden freight cars after 1930. This edict, if it means anything at all, means that the roads must replace probably 300,000 cars of wooden underframe construction in the next few years.

SUCH an event as that would give stimulus and vigor to a phase of the steel market that has long been lacking in those qualities. In only one year since the war year of 1918 has there been any substantial buying of cars by the roads. In the closing year of the war, fears of a car shortage led the Railroad Administration to purchase 202,000 freight cars.

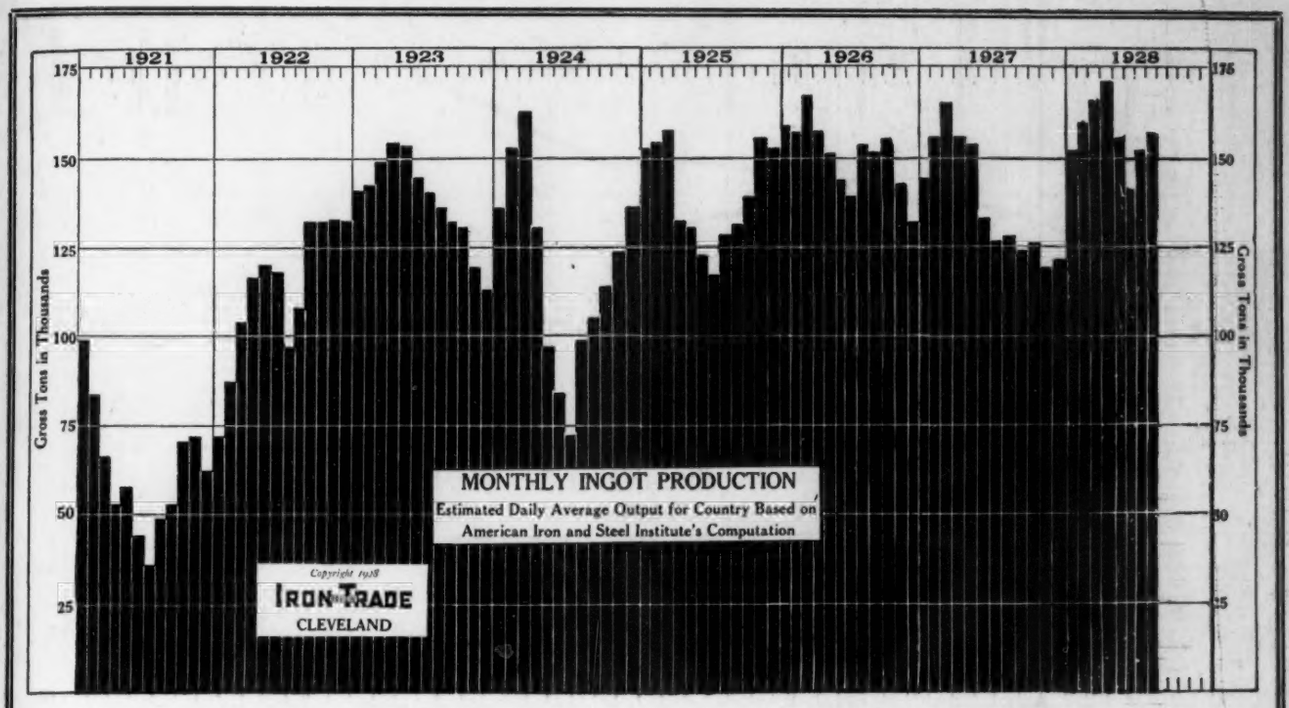
IN 1919, purchases dropped to 20,000 cars. They were 80,000 in 1920, and 22,000 in the depression year of 1921. The succeeding year witnessed some revival, with purchases of 180,000. The following year of 1923 brought a decline to 100,000, while 1924 uncovered awards for 126,000. The total for 1925 was 77,000; for 1926 it was 60,000 and during 1927 the railroads purchased only 64,000 freight cars.

DURING the first eight months of 1928, buying has subsided almost to the vanishing point. The low mark was in July with awards of 582. Only trifling recovery came with August with estimated awards of 677, making a total of 29,700 cars for the year to the end of August. This compared with 45,641 cars for the corresponding period of 1927. In August last the roads purchased 1181 cars.

SINCE 1918, through the first eight months of 1928, the aggregate purchases of cars by the railroads have amounted to approximately 760,000, or less than 80,000 cars annually. During the last four years the average has been about 60,000 cars annually. This has not been sufficient to give life to the railroad equipment industry. Locomotive buying has been low also.

THE lack of buying has been accounted for by the amazing increase of efficiency on the part of the roads. This unpredictable factor has thrown off all forecasts as to when large scale buying of equipment might be expected to start. The edict against wooden cars provides a tangible factor, indicating the greatest activity in rail equipment in a decade.

The Business Trend

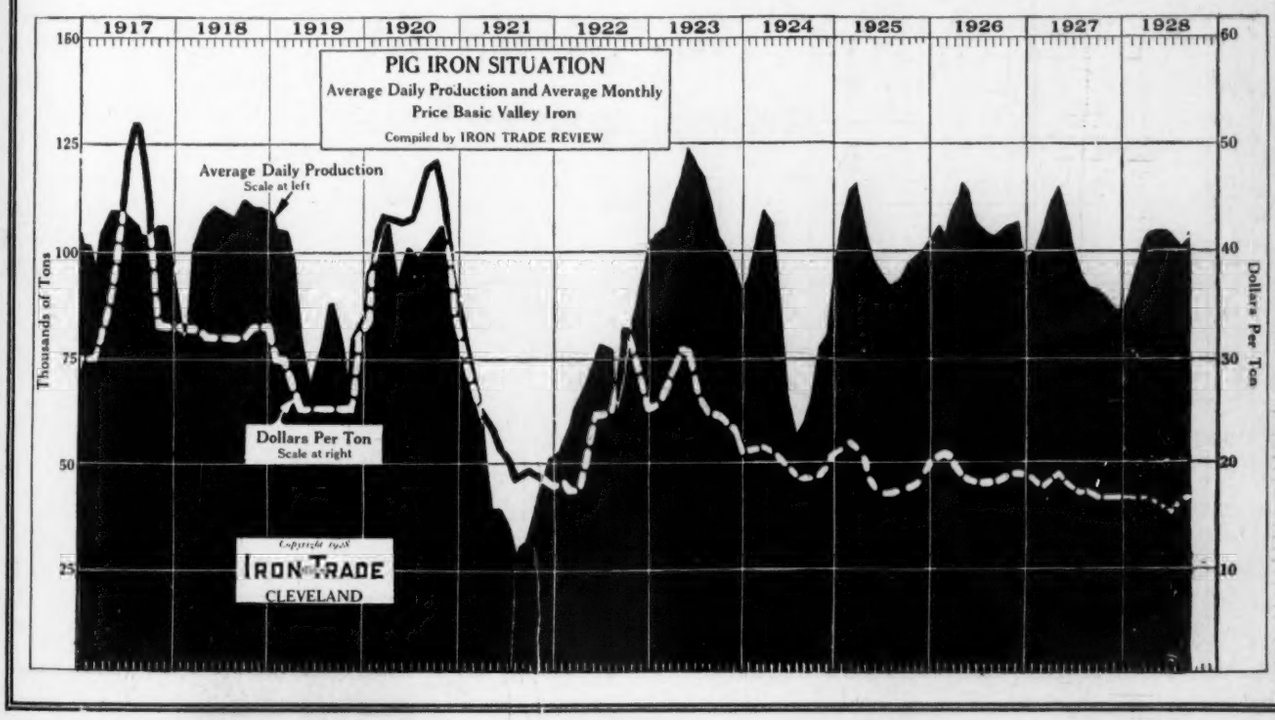


Steel Ingots

THE production of steel ingots in August reached the highest rate for that month on record. The daily average rate of output was 154,759 gross tons compared with 152,463 in July and with 129,576 in August, 1927. The former high rate for August was in 1926 when output reached 153,345 tons. For the first eight months of the year production of bessemer and open-hearth steel ingots totaled 32,782,937 tons compared with 30,510,710 gross tons in the corresponding period of last year.

Pig Iron Situation

THE downward trend of pig iron production which has persisted since May was reversed by an increase in August. Daily rate of output for that month was 101,161 tons, an increase of 2 per cent over the rate of 99,120 tons of July. It shows a gain of 6 per cent over the 95,183 tons of August, 1927. For the first eight months of 1928 pig iron production stands at 24,719,182 tons compared with 25,334,526 tons. Except for August, 1926, last month's production was the best for any August in five years.



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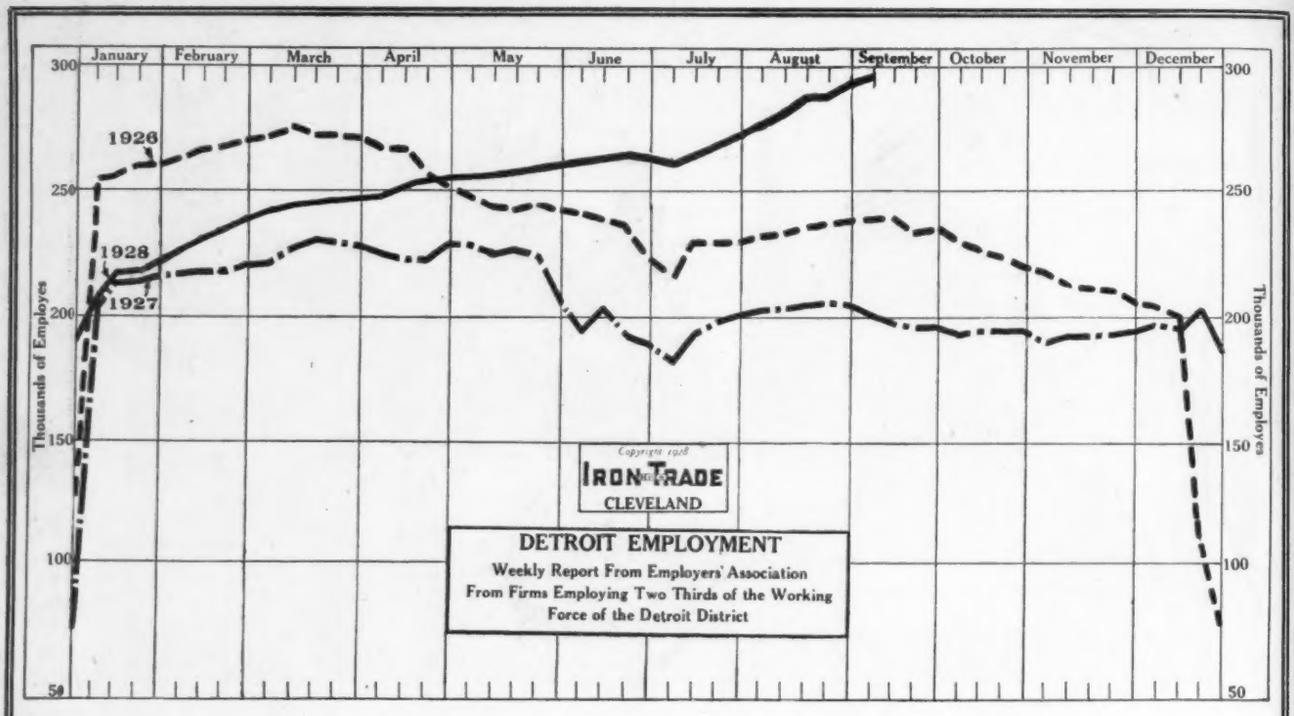
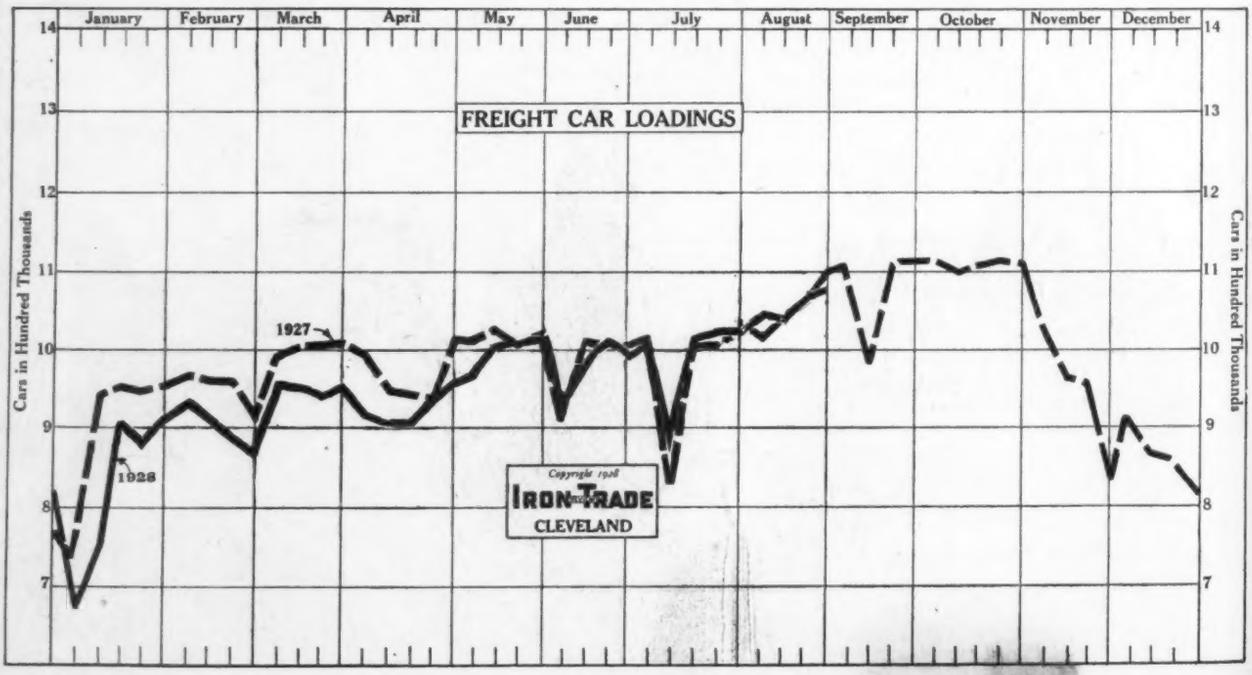


Detroit Employment

THE upward trend of employment in the Detroit manufacturing district continues. For the first week of September a total of 298,744 workers was reported as actively employed. This indicated an increase over the previous week of 5287 workers and it was 98,079 workers more than for the corresponding week of last year. This is the largest gain so far recorded in 1928 compared with similar period of 1927. The unemployment decline in the Detroit district indicates large scale automobile production.

Foreign Car Loadings

A NEW 1928 peak in revenue freight car loadings was established in the week ended Aug. 25. Loadings during the period totaled 1,080,840 cars or a gain of 24,000 cars over the preceding week. Compared with the corresponding week of 1927, however, there was a decline of 28,500 cars. One year ago for the corresponding week total loadings were 1,109,341 cars. Crop movements are beginning to be reflected on a large scale in the weekly totals of car movements.



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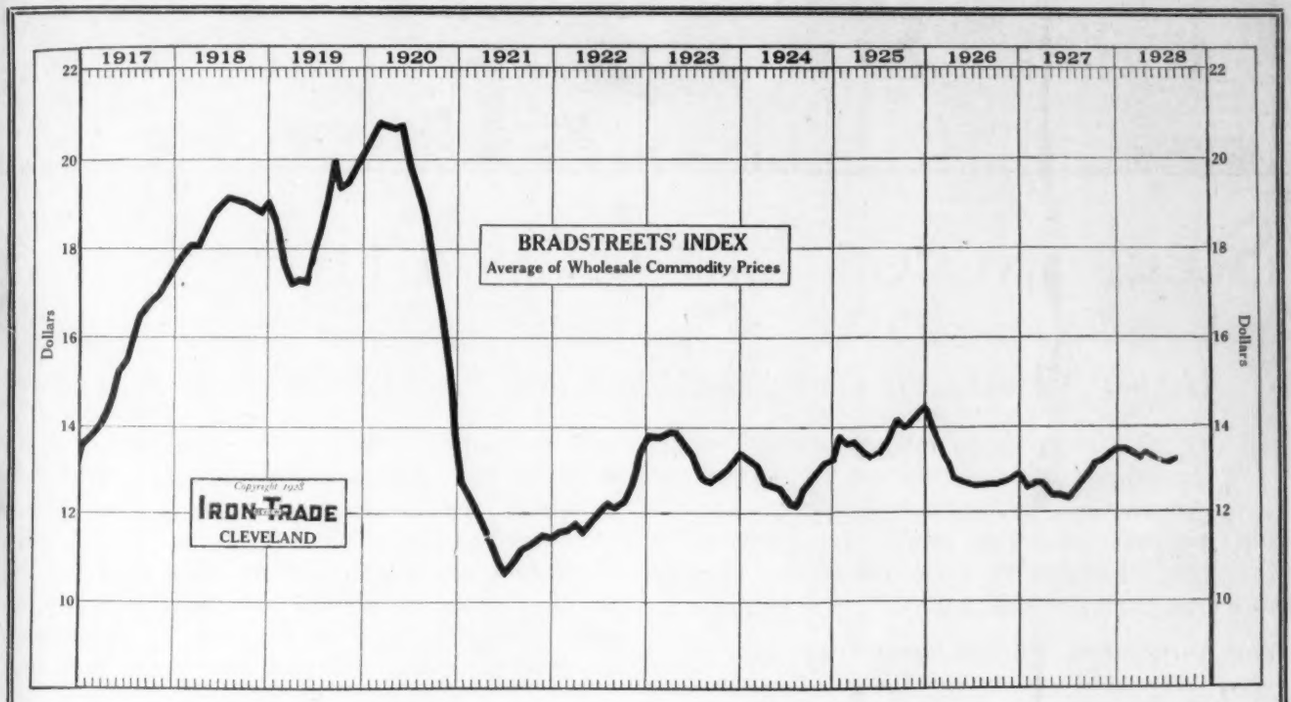
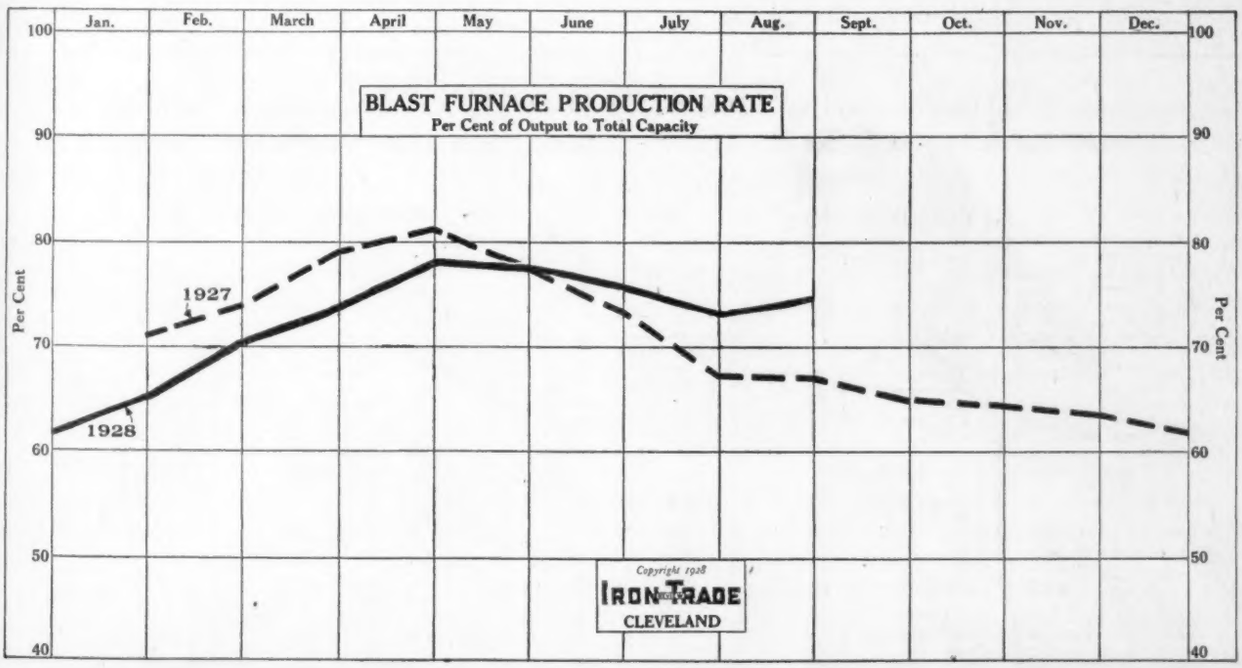


Bradstreet Index

WHOLESALE commodity prices as of Sept. 1 turns slightly upward, according to Bradstreet's index. The index is about 44 per cent over the 1913 average and about 1 per cent higher than it was one year ago. During the month there were advances for live stock, provision, metals, building materials, and chemicals and drugs. Of the other commodities comprising Bradstreet's index, breadstuffs declined as did textiles, oils, naval stores and miscellaneous commodities.

Furnace Production Rate

DURING August blast furnaces in the country produced iron at the rate of 74.4 per cent of their capacity. The capacity is estimated by the American Iron & Steel institute at 49,605,720 tons as of Dec. 31, 1927. The rate of operation last month compared with 73.2 per cent in July and 67.6 per cent in August, 1927. At the close of August 182 furnaces were in blast compared with 185 for the preceding month. This was a decline of three furnaces in blast during this month.



Steel Needs Large as Prices Hold

Specifications Broad Despite August Record Production—Producers Stress Higher Values—Pig Iron Sales Brisk and Prices Firm—Pipe Placed

AUGUST'S record steel tonnage appears safely in process of digestion and sources of demand, far from being dried up, are providing specifications whose proportions thus far in the month promise to carry September as well to a new high production level.

Are Anticipating but Not Speculating

To a mild extent, business has been and is being driven in by the threat of higher fourth quarter prices, but stocking of the character known prior to 1921 is negligible. Many consumers, notably of sheets, have specified all their third quarter contract material and some have purchased supplementally at current prices, but substantially all this steel is earmarked for definite consumption. There has been some anticipation, but little speculation. In these days of high handling costs and attractive interest rates, it takes more than the threat of a $2 per ton advance to send surplus funds into stockpiles.

In prices the trend, considering all products, is unmistakably upward. Producers of steel bars, plates and shapes were not as inflexible as threatened in making Sept. 10 the deadline on specifications for shipment this quarter; some are accepting specifications to Sept. 15 and others to the end of the month. Some makers will book at current prices for shipment this month. But on the whole, deviations are uncommonly few and producers have rarely been so determined as now to obtain $2 per ton more for next quarter. On sheets, strip, wire products and other lines there are evidences that producers will not get their full prices, but they will probably realize more than in the third quarter.

Pipe Projects Big Outlets for Steel

Some large tonnage requirements for steel developed in the past week. Chicago mills booked 100,000 tons of plates for a Milwaukee manufacturer of welded pipe. The Sinclair Oil Co. placed 45,000 tons of line pipe, and the Texas Co. inquired for 25,000 tons. About 21,000 tons of plates and shapes are up for a New York water tunnel. The Great Northern's award of 1000 freight cars and 2000 underframes calls for 15,000 tons of heavy steel. But the chief support of

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	Sept. 12, 1928	August 1928	June 1928	Sept. 1927
PIG IRON				
Bessemer, del., Pittsburgh	$18.76	18.76	18.76	19.86
Basic, valley	16.00	16.00	15.81	17.15
Basic, eastern, del. eastern Pa.	19.00	19.00	19.10	19.75
No. 2 foundry, del., Pittsburgh	18.51	18.26	18.61	19.26
No.2 foundry, Chicago	18.00	17.60	18.00	19.50
*Southern No. 2, Birmingham	16.25	15.65	15.90	17.25
*Southern Ohio, No. 2 Ironton	19.00	19.00	19.00	19.00
**No. 2X, Virginia furnace	20.50	20.00	20.50	21.50
**No. 2X, eastern, del. Phila.	20.76	20.76	21.26	21.01
Malleable valley	17.00	17.00	17.00	17.50
Malleable, Chicago	18.00	17.60	18.00	19.50
Lake Superior charcoal del. Chicago	27.04	27.04	27.04	27.04
Gray forge, val., del. Pittsburgh	18.01	18.01	18.76	18.76
Ferromanganese, del. Pittsburgh	109.79	109.79	109.79	94.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	2.75	2.75	2.60	2.85
Connellsville, foundry, ovens	3.75	3.75	3.50	4.00
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	33.00	33.00	32.60	33.90
Sheet bars, open-hearth, Pittsburgh	33.00	32.20	33.50	33.90
Billets, open-hearth, Pittsburgh	32.00	32.00	32.50	33.00
Wire rods, Pittsburgh	42.00	42.00	44.00	43.00

	Sept. 12, 1928	August 1928	June 1928	Sept. 1927
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.90	1.85	1.85	1.80
Steel bars, Chicago	2.00	2.00	2.00	1.85
Steel bars, Philadelphia	2.22	2.17	2.17	2.07
Iron bars, Chicago	2.00	2.00	2.00	2.00
Shapes, Pittsburgh	1.90	1.85	1.85	1.80
Shapes, Philadelphia	2.01	2.01	2.06	2.02
Shapes, Chicago	2.00	2.00	2.00	1.85
Tank plates, Pittsburgh	1.90	1.85	1.85	1.80
Tank plates, Philadelphia	2.10	2.10	2.10	2.07
Tank plates, Chicago	2.00	2.00	2.00	1.85
Sheets, black, No. 24, Pittsburgh	2.65	2.65	2.70	3.00
Sheets, blue anl., No. 10, Pittsburgh	2.00	2.00	2.00	2.25
Sheets, gal., No. 24, Pittsburgh	3.50	3.50	3.55	3.85
Sheets, black, No. 24, Chicago	2.80	2.80	2.80	3.15
Sheets, blue anl., No. 10, Chicago	2.15	2.15	2.15	2.40
Sheets, galvanized, No. 24, Chicago	3.65	3.65	3.70	4.00
Plain wire, Pittsburgh	2.40	2.40	2.50	2.40
Wire nails, Pittsburgh	2.55	2.55	2.60	2.55
Tin plate, per base box, Pittsburgh	5.25	5.25	5.25	5.50
SCRAP				
Heavy melting steel, Pittsburgh	16.75	15.00	14.70	15.00
Heavy melting steel, eastern Pa.	13.00	12.75	13.15	14.00
Heavy melting steel, Chicago	12.75	12.65	12.60	12.20
No. 1 wrought, eastern Pa.	14.50	14.80	15.25	15.75
No. 1 wroughtfi Chicago	12.90	12.40	12.70	12.70
Rails for rolling, Chicago	15.50	15.00	14.85	15.20

Current Prices for Rolled Steel Products

PRICES IN CENTS PER POUND UNLESS OTHERWISE INDICATED

STEEL PLATES

Pittsburgh	1.90c to 2.00c
Philadelphia, del.	2.10c to 2.15c
New York, del.	2.125c to 2.225c
Boston, del.	2.265c to 2.415c
Chicago	2.00c
Cleveland, delivered	2.09c to 2.19c
Buffalo	2.00c
Coatesville, Sparrows Point	1.95c to 2.00c
Birmingham	2.05c
Pacific Coast, c.i.f.	2.25c

STRUCTURAL SHAPES

Pittsburgh	1.90c to 2.00c
Philadelphia, del.	2.01c to 2.11c
New York, del.	2.14c to 2.19c
Boston, del.	2.265c to 2.415c
Chicago	2.00c
Cleveland, delivered	2.09c to 2.19c
Buffalo	2.00c
Bethlehem	1.95c to 2.00c
Birmingham	2.05c
Pacific Coast, c.i.f.	2.35c

BARS

SOFT STEEL

Pittsburgh	1.90c
Chicago	2.00c
Birmingham	2.05c
Buffalo	2.00c
Pacific Coast, c.i.f.	2.35c
Cleveland	1.95c to 2.05c
Philadelphia, del.	2.17c to 2.22c
New York, delivered	2.19c to 2.24c
Boston, delivered	2.265c to 2.415c
Pittsburgh, cold finishing	2.05c
Pittsburgh, forging quality	2.15c

RAIL STEEL

Chicago Heights	1.85c to 1.90c
Eastern mills	1.75c

IRON

Chicago	2.00c
New York, delivered	2.14c to 2.24c
Philadelphia, delivered	2.12c to 2.22c
Pittsburgh, refined	2.75c to 4.25c

REINFORCING

Pittsburgh billet, cut lengths	2.25c
Stock lengths from mill	2.00c
Chicago, billet	2.30c to 3.00c
Chicago, rail steel	2.00c to 2.60c
Chicago, rail steel, road and bridge work	1.85c to 1.95c
Philadelphia	2.47c

COLD FINISHED STEEL

Cold finished steel bars, drawn or rolled, Pitts., Chi., c.l.	2.20c
Shafting (turned, polished) Pittsburgh	2.20c
Shafting (turned, ground) mill (Depending on size, 1 3/16 to 7-inch)	2.55c to 3.00c
Cold finished steel bars, Cleve.	2.25c

TIN AND TERNE PLATE

Prices per 100-pound box Pittsburgh

*Tin plate, coke base	$5.25
Gary, Ind., base 10 cents higher.	
Long ternes, primes, No. 24	4.10c

*Price subject to quantity differentials.

SHEETS

SHEET MILL BLACK

No. 24, Pittsburgh base	2.65c
No. 24, Philadelphia, delivered	2.92c to 3.02c
No. 24, Gary, Indiana Harbor	2.75c
No. 24, Chicago, delivered	2.80c
No. 24, Birmingham, base	2.90c

TIN MILL BLACK

No. 28, Pittsburgh, base	2.90c
No. 28, Gary, base	2.95c to 3.00c

GALVANIZED

No. 24, Pittsburgh, base	3.50c to 3.60c
No. 24, Philadelphia, delivered	3.72c to 3.82c
No. 24, Gary, Indiana Harbor	3.60c
No. 24, Chicago, delivered	3.65c
No. 24, Birmingham, base	3.70c

BLUE ANNEALED

No. 10, Pittsburgh, base*	2.00c
No. 24, Philadelphia, delivered	2.22c to 2.42c
No. 10, Gary, Indiana Harbor	2.10c
No. 10, Chicago, delivered	2.15c
No. 10, Birmingham, base	2.20c

*Plus 10 cents for 45 inches or wider.

AUTOMOBILES

No. 20, Pittsburgh, base	4.00c

FURNITURE

No. 24, Grade A, Pittsburgh	3.80c
No. 24, Grade B, Pittsburgh	3.60c

(Turn to the following page)

the market still comes from the automotive industry, whose requirements are expanding at a time when they might be expected to abate. Ford is now assembling 4500 cars daily and is aiming at 5000 by Oct. 1, Buick, Chrysler and Graham-Paige are far behind their orders and Willys-Overland schedule is up 15 per cent.

It is evident from continued heavy bookings of pig iron that the recent price advances in practically all districts did not climax the buying movement. Shipments, which have depleted stocks at furnaces, are moving directly into consumption and judging from the present rate of melt consumers have by no means covered all their fourth quarter needs. At Cleveland the price for local delivery has been stepped up 50 cents, to $18, furnace. Some first quarter iron has been sold by Buffalo producers at an advance of 50 cents. Two merchant stacks have been lighted at Chicago. Considerable spot selling to meet requirements before fourth quarter iron is shipped has developed.

1928 Certain to Be Record Year

August's record production of steel ingots, which at 4,178,481 tons compares with 3,811,573 tons in July and 3,986,966 tons in August, 1926—the previous record—seems to clinch 1928 as the best steel year ever. In eight months the industry has made 32,782,937 tons of ingots, a daily average of 157,610 tons. In the same period of 1926—the record year—output was 31,775,768 tons. Production over the remainder of 1928 can fall 17 per cent, to a daily average of 132,800 tons, and still top 1926. If the margin of 3.26 per cent over 1926 is maintained in the final four months, 1928 will be a better ingot year than 1926 by over 1,000,000 tons. One indication of the confidence of steelmakers is the fact that, after increasing shipping instructions last week for 520,000 tons additional of lake ore this season, they have specified 200,000 tons more this week. The increase of 53,116 tons in the Steel corporation's unfilled tonnage Aug. 31 is another good harbinger.

Steel Corporation Operations Pick Up

Steel corporation subsidiaries are operating this week at 77 per cent, a gain of one point over last week, and the entire industry is at about 75 per cent. Although a steelworks stack has been blown out at Chicago that district's steelworks continue at 80 per cent. Mahoning valley plants are close to 85 per cent, additional open hearth capacity offsetting some bessemer capacity that has been dropped. Pittsburgh mills average about 80 per cent.

Production quotas of members of the continental steel entente are expected at least to be maintained, states an IRON TRADE REVIEW dispatch from London. Belgium producers are doing good export trade. IRON TRADE REVIEW composite of fourteen leading iron and steel products is up 2 cents this week to $35.13. This barometer one month ago stood at $34.89 and 60 days ago at $34.85.

Composite Market Average

Based on Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (Sept. 12, 1928)	$35.13
Last week (Sept. 5, 1928)	35.11
One month ago (August, 1928)	34.96
Three months ago (June, 1928)	35.30
One year ago (September, 1927)	36.18
Ten years ago (September, 1918)	56.56
Fifteen years ago (September, 1913)	25.55

Current Rolled Steel Prices

PRICES IN CENTS PER POUND UNLESS OTHERWISE INDICATED
SEE ALSO PRECEDING PAGE

HOOPS, BANDS, STRIPS

Hot strip, under 3-inch, Pitts. 2.10c to 2.20c
Hot strip, 3 to 6-inch, Pitts. 1.90c to 2.00c
Hot strip, 6 to 12-inch, Pitts. 1.80c to 1.90c
Hot rolled strip, 12 to 24-inch 16 gage and heavier, coils or cut lengths, 1.85c plate basis, or 2.00c blue annealed basis.
Hot strip, bands, under 3-in., Chicago 2.30c
Hot strip, bands, 3 to 6-in. Chi. 2.20c
Hot strip, bands, 6 to 12-in., Chi. 2.00c
Hot strip, 12 to 24 in., Chi..... 2.10c
blue annealed sheet basis.
Cold rolled strip, hard coils, 16 inches and wider by 0.100-inch and heavier, base Pitts., Cleve., (3 tons and over)..... 2.75c to 2.85c
Worcester, Mass. (3 tons and over) ..... 3.00c to 3.10c
Quantity extras: 5999 to 2000 pounds, 0.25c; 1999 to 1000 pounds, 0.65c.

ALLOY STEEL

Hot Rolled
F.o.b. Mills
Alloy Quality Bar Base is 2.75c

S.A.E. Series Number	Alloy differential	Net, 100 lb. bars
2000	0.25	$3.00
2100	0.55	3.30
2300	1.50	4.25
2500	2.25	5.00
3100	0.55	3.30
3200	1.35	4.10
3300	3.80	6.55
3400	3.20	5.95
4100 0.15-0.25 Mo.	0.50	3.25
4100 0.25-0.40 Mo.	0.70	3.45
4600 0.20-0.30 Mo. 1.25-1.75 Ni.	1.05	3.80
5100 0.60-0.90 Cr.	0.35	3.10
5100 0.80-1.10 Cr.	0.45	3.20
5100 Chrome Spring	0.20	2.95
6100 Bars	1.20	3.95
6100 Spring Steel	0.95	3.70
Chrome Nickel Vanadium	1.50	4.25
Carbon Vanadium	0.95	3.70
9250	0.25	3.00

TUBING

Boiler
Carload Discounts—Less-carloads 4 points Lower—F.o.b. Pittsburgh Mills
Steel 3¼ to 3¾-inch 42½
Charcoal iron, 3¼ to 4½-inch 9
Seamless hot rolled 3¼ to 3½-inch.... 56
Further discounts of six 5 per cents for 21,000 pounds or more on lap welded steel. On charcoal two 10's and one 2½ on 12,000 pounds or more.

COLD DRAWN SEAMLESS
F.o.b. mill in desirable quantities
Random length over 5 feet .....55 per cent
Selected lengths, 1 to 18 feet .....53 per cent

WIRE PRODUCTS

To Jobbers in Carloads
F.o.b. Cleveland and Pittsburgh base
Dealers 10 cents per 100 pounds extra

Bright plain wire, No. 9 gage.. 2.40c
Annealed fence wire 2.55c
Galvanized wire, No. 9 gage.... 3.00c
Barbed wire, painted 2.95c
Barbed wire, galvanized 3.20c
Per 100 lbs.
Wire nails $2.55
Galvanized nails, plus differ. 4.55
Polished staples 3.00
Galvanized staples 3.25
Coated nails, 100 lb. kegs, Sept. 1, 1926 extras apply.... 2.55
Woven wire fencing (retailers) 12½ gage, 26-in. high, 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts. $20.03
Joliet, DeKalb and Waukegan, Ill., Anderson, Ind., and Chicago prices $1 per ton over Cleveland-Pittsburgh base on products made there; Duluth $2 higher, Worcester, Mass., and Fairfield, Ala., $3 higher.

CAST IRON WATER PIPE

Prices per net ton
Class B Pipe

Six-inch and over, Birming'm..$34.00 to 35.00
Four-inch, Birmingham ..... 38.00 to 39.50
Four-inch, Chicago ..... 46.20 to 47.20
Six-inch to 24-inch, Chicago..... 42.20 to 43.20
Four-inch, New York ..... 41.50 to 42.60
Six-inch and over, New York.. 37.60 to 38.60
Standard fittings, Bir. base..... $100.00
Six to 24-inch base; over 24-inch; plus $20; 4-inch, plus $10; 3-inch, plus $20; gas pipe fittings, $5 higher.
Class A pipe is $4 higher than Class B.

IRON AND STEEL PIPE

Base Discounts Pittsburgh and Lorain, O., to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel*	62	50½
1 to 1½-inch butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less, Chicago del., 2½ points less.
*To large jobbers these discounts are increased on black by 1 point and a supplementary discount of 5 per cent on galvanized by 1½ points with a supplementary 5 per cent.

CHAIN, PILING, CUT NAILS

Cut nails, c.l., f.o.b. mills..... 2.70c
Cut nails, l.c.l. f.o.b. mills..... 2.80c
Chain,, 1-in., proof coil, Pitts.... 6.00c
Sheet piling base, Pittsburgh.. 2.25c

RAILS, TRACK MATERIAL

Standard bessemer rails, mill $43.00
Standard open-h'th rails, mill $43.00
Relaying rails, St. Louis.....$24.00 to 31.00
Relay rails, Pitts. 60 to 90 lb...$22.00to 27.00
Light rails, 25 to 45, milis..... $36.00
Angle bars, Chicago base..... 2.75c
Spikes, railroad, Pittsburgh.... 2.80c
Spikes, small railroad, ⅞-inch and smaller, Pitts..... 2.80c
Spikes, boat and barge, Pitts. 3.00c
Spikes, railroad, Chicago 2.80c
Track bolts, Pitts., steam roads 3.80c
Track bolts, Pitts., stand, jobbers .....70 off list
Track bolts, Chicago 3.80c
Tie plates, Chicago, Pitts..... $43.00

BOLTS AND NUTS

Birmingham and Chicago
Discounts are for legitimate jobbing or large consuming trade purchasing in full-case lots, apply to lists of April 1, 1927.
Small lots are 55 to 60 per cent off.

CARRIAGE BOLTS
All sizes, cut thread ..... 60 to 70 off
Rolled thread ⅝x6 and smaller take 10 per cent lower list.
Eagle list ..... 60 to 70 off

MACHINE BOLTS
All sizes, cut thread ..... 60 to 70 off
Rolled thread ⅝x6 and smaller take 10 per cent lower list.
Lag screws ..... 60 to 70 off
Plow bolts, Nos. 1-2-3-7 heads 60 to 70 off
Tap bolts ..... 60 to 70 off
Blank bolts ..... 60 to 70 off
Stud bolts without nuts ..... 60 to 70 off
Stove bolts, 75, 20, 10 and 5 off in pkgs., 75, 20, 10 and 5 with 2½ off in bulk.
Tire bolts .....60-5 off

Nuts
Semifinished .....60 to 70 off

HEXAGON CAP SCREWS
Milled .....80-10-10 off
Upset 1 in. diam. and smaller .....85-5 off

SQUARE HEAD SET SCREWS
Milled .....80-10 off
Upset 1 in. diam. and smaller.....80-10-10 off

RIVETS

Struct., c.l., Pitts.-Cleve..... 2.80c to 2.90c
Structural, c.l., Chicago 3.00c
**⅞-inch and smaller, Pitts.....70 and 10 off
Chi., Cleve. .....70 to 70 and 10 off
**Some makers quoting 70 off with freight allowed on 300 pounds or more.

WASHERS

Wrought, c.l., Pitts. dist.....$6.50 to 6.75 off
Wrought, c.l., Chicago dist.....$6.70 to 6.90 off
Lock: To dealers .....85-5 off
Lock: To consumers .....85 off

Raw Materials and Semifinished Products

SEMIFINISHED MATERIAL

Prices Per gross ton

BILLETS AND BLOOMS
4 x 4-inch base

Pittsburgh, open-hearth .....$32.00 to 33.00
Pittsburgh, bessemer ..... 32.00 to 33.00
Youngstown 32.00
Cleveland 33.00
Philadelphia 38.30
Chicago ..... 32.00 to 33.00
Forging, Chicago 38.00
Forging, Pittsburgh 38.00
Forging, Philadelphia 43.30

SHEET BARS
Pittsburgh .....$32.00 to 33.00
Youngstown 33.00
Cleveland ..... 32.50 to 33.00
Chicago 35.00

SLABS
Pitts., Young., and Cleve.....$32.00 to 33.00

WIRE RODS
Pittsburgh, Cleveland $42.00
Chicago 45.00

SKELP
All grades, Pittsburgh ..... 1.85c to 1.90c

IRON ORE

LAKE SUPERIOR ORE
Per Gross Ton, Lower Lake Ports

Old range bessemer, 51½%.... $4.55
Mesabi bessemer, 51½% 4.40
Old range nonbessemer 51½% 4.40
Mesabi nonbessemer, 51½%..... 4.25

EASTERN LOCAL ORES
Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic, 56-63% 8.00
Copper free low phosphorus 58 to 65 per cent ..... nominal

FOREIGN ORE
Cents per unit, alongside docks, Atlantic ports

Foreign manganiferous ore, 45-55% iron, 6-8% manganese.. 10.50 to 11.00
North African low phosphorus 10.00 to 11.00
Swedish foundry or basic, 65%—none offered
Spanish and North African basic, 50 to 60 per cent ..... 8.50 to 9.00
Newfoundland foundry, 55%.... 8.50

MANGANESE ORE

Prices do not include duty of 1 cent per pound of metallic manganese contained.

Brazilian ..... 36 to 38 cents
Indian ..... 35 to 38 cents
Caucasian (53-55 per cent) ....38 to 40 cents

FLUORSPAR

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton....$16.50 to 17.00
Washed gravel, imported duty paid, east, tidewater, net ton $15.25 to 15.75

REFRACTORIES

FIRE CLAY BRICK
Per 1000 f.o.b. works

First Quality

Pennsylvania .....$43.00 to 46.00
Ohio ..... 43.00 to 46.00
Illinois ..... 43.00 to 46.00
Kentucky ..... 43.00 to 46.00
Missouri ..... 43.00 to 46.00
Maryland ..... 43.00 to 46.00
Georgia and Alabama ..... 40.00 to 45.00

Second Quality

Pennsylvania ..... 35.00 to 38.00
Ohio ..... 35.00 to 38.00
Illinois ..... 35.00 to 38.00
Kentucky ..... 35.00 to 38.00
Missouri ..... 35.00 to 38.00
Maryland ..... 35.00 to 38.00
Georgia and Alabama ..... 30.00 to 35.00

SILICA BRICK
Pennsylvania 43.00
Joliet, Ill., East Chicago, Ind.... 52.00
Birmingham ..... 50.00 to 51.00

MAGNESITE BRICK
Per Net Ton
9 x 4½ x 2½ 65.00

MAGNESITE
Net Ton Chester, Pa., and Baltimore base
Dead-burned grain magnesite.... 40.00

CHROME BRICK
Net Ton Chester, Pa., and Baltimore base.
9 x 4½ x 2½ 45.00

Pig Iron

Market Continues Moderately Active and Strong—Shipments Better Than August Rate—Small, Spot Orders Pouring in

STRENGTH of the pig iron market is shown by the fact that recent price advances did not mark the culmination of a buying movement, with practically all melters covered at lower figures, but there is a continuation of active selling. Advances did not check the demand as much as usual. Stocks have been greatly reduced, and from the position of many furnaces melters infer another advance is not improbable. Some buyers, seeking to place larger tonnages for fourth quarter than is known they will require, are signing contracts to pay 50 cents more for iron in the first quarter, this being true in the Buffalo district. Makers are being bombarded with small orders for spot shipment. Shipments to date this month are heavier than in August, the best month in 1928.

PITTSBURGH, Sept. 11.—Large tonnage sales of pig iron are lacking and prices generally are unchanged, with a number of sellers continuing to name the recently advanced figures as minimum. Some users are covered for a short time ahead, but restricted stocks in certain instances are providing a fairly steady run of small lot business. Most sellers continue to name $17, base, valley, as minimum for No. 2 foundry iron, at which price sales have been made, but reports still are heard of transactions at $16.75. The melt in this district is slightly more active. The tone in bessemer iron is improving, with the trend toward $17.25 as minimum. A few sellers are asking $17.50. Activity in basic iron is restricted. Some makers refuse to quote less than $16.50, valley, although $16 more nearly represents the market. Malleable is quoted $17 to $17.25, valley, sales reported at both figures.

Boston, Sept. 11.—About 7000 tons of pig iron was sold in this district in the past week. The Mystic Iron Works booked fully 5500 tons. Prices are firmer, with a small amount of Pennsylvania iron being sold as high as $20.50, furnace, for No. 2X and $21 for No. 1X, taking a freight rate of $3.65.

New York, Sept. 11.—Fully 10,000 to 13,000 tons of pig iron was placed in this district within the past week. The Central Foundry Co. closed on 6000 tons for its various plants, with a portion of the business going to foreign sellers, leading trade interests estimate that close to 5000 of 6000 tons probably will be closed in the next week for delivery over the remainder of the year. Some substantial business has been placed in this territory at $17, base, Buffalo, with the market apparently firm at that figure, except in the immediate Buffalo district, where 50 cents higher is being quoted. An upward tendency is more pronounced in eastern Pennsylvania iron, with the $20 base price more prevalent. Shipments of foundry iron are heavy.

Buffalo, Sept. 11.—Buffalo furnaces report numerous sales of pig iron at the new base of $17 for foundry, for eastern delivery and $17.50 for local consumption. Among recent bookings is 2000 tons for a maker of heating equipment in central New York. Silicon differentials are in effect, it is claimed. The Hanna Furnace Co. will start its new furnace here late this month, sooner than was expected.

Predictions that movement of pig iron on the New York state barge canal would reach record proportions this year are being fulfilled. Up to Aug. 25 the last date of official reports of the waterway, 90,312 tons of iron had been moved from Buffalo, as compared with 45,404 tons to the same date of 1927.

Youngstown, O., Sept. 11.—At least part of the fourth quarter requirements of southern pig iron for the Standard Sanitary Mfg. Co., Pittsburgh, for delivery at its Louisville, Ky., plant has been placed, a local interest having booked 2000 tons of No. 2 at the new price of $16.25, Birmingham. It is believed here that about as much more iron for Louisville went to another Alabama producer at the same price.

Cleveland, Sept. 11.—The buying movement in pig iron continues, though not as actively as in the latter part of August. Furnace interests at Cleveland booked in the past week 33,000 tons, compared with 46,000 tons in the preceding week, and 73,000 tons in the week before that. Spot demand is brisk, some melters who closed recently for fourth quarter coming back in the market for iron for immediate shipment. Shipments generally are at a better rate than in August, which was the best month so far this year. Inquiries indicate a continuation of good business. Cleveland furnaces announced on Tuesday an increase of 50 cents in their price for local delivery, now quoting $18, base, furnace, for shipment in the 50-cent switching area. The majority of Cleveland melters have closed for fourth quarter at the former price, but several important consumers will require additional tonnage. Cleveland furnaces continue their price for outside shipment at $17, base, furnace, but as they are practically sold up there is some talk of another advance to $17.50. The price in Michigan is $18. The market at Buffalo is the strongest it has been in years, with most furnaces booked heavily, and little iron available. Buffalo makers claim $17.50, base, furnace, is minimum for local or outside shipment of foundry iron, malleable being 50 cents higher. As some consumers have sought to cover requirements extending into 1929 at present prices, makers have taken a firm attitude and insist that contracts provide a price of $18 on all iron not taken out before Jan. 1.

Chicago, Sept. 11.—The falling off in pig iron bookings as a result of the recent advance in the Chicago furnace price is less marked than was expected. Most buyers estimated their needs conservatively before the advance, and have been coming

(*Concluded on Page* 667)

Pig Iron Prices

Per Gross Ton

Bessemer, valley furnace	$17.00 to $17.50
Bessemer, del., Pittsburgh	18.76 to 19.26
Basic, valley furnace	16.00 to 16.50
Basic, del., Pittsburgh	17.76 to 18.26
Basic, Buffalo furnace	17.00
Basic, del., eastern Pa.	19.00 to 19.25
Malleable, valley furnace	17.00 to 17.25
Malleable, del. Pittsburgh	18.76 to 19.01
Malleable, del. Cleveland	18.50
Malleable, Chicago furnace	18.00
Malleable, Buffalo furnace	17.50 to 18.00
Malleable, del. eastern Pa.	20.50 to 21.00
No. 1 foundry, Chicago furnace	18.50
No. 1X, eastern del., Phila.	21.26 to 21.76
No. 1X, Buffalo furnace	18.50 to 19.00
No. 2 foundry, valley furnace	16.75 to 17.00
*No. 2 foundry, del., Pittsburgh	18.51 to 18.76
No. 2 plain, Buffalo furnace	17.00 to 17.50
No. 2 foundry, Chicago furnace	18.00
No. 2 foundry, Granite City	19.00 to 19.50
No. 2 foundry, Ironton furnace	19.00
No. 2 foundry, del. Cleveland	18.50
No. 2 plain, del., Phila.	20.26 to 20.76
No. 2 plain, Virginia furnace	20.00
No. 2 plain, N. J., tidewater	19.01 to 19.51
No. 2 Alabama, Birmingham	16.25
No. 2 Alabama, del., Cincinnati	19.94
No. 2 Tenn., Birmingham base	16.25
No. 2 Tenn., del., Cincinnati	19.94
No. 2 Alabama, del., Chicago	22.26
No. 2 Alabama, del. Cleveland	22.51
No. 2 Alabama, del. St. Louis	20.67
No. 2X, east, N. J., tidewater	19.51 to 20.01
No. 2X, eastern, del. Phila.	20.76 to 21.26
No. 2X, foundry, Buffalo, furnace	17.50 to 18.00
No. 2X, eastern, del. Boston	20.91 to 21.41
No. 2X, Virginia furnace	20.50
Gray forge, val., del., Pittsburgh	18.01 to 18.26
Low phos., standard, valley	26.50
Low phos., standard, Phila.	24.26 to 24.76
Low phos. copper bearing fur.	23.00 to 23.50
Charcoal, Birmingham	28.00
Charcoal, Superior, del., Chicago	27.04

CANADIAN PRICES

No. 2 foundry, del. Toronto	23.10 to 23.60
No. 2 foundry, del. Montreal	24.50 to 25.00
Malleable, del. Toronto	23.10 to 23.60
Malleable, del. Montreal	24.50 to 25.00
Basic, del. Montreal	23.50 to 24.00

Silvery iron, Jackson county (Ohio) furnace in per cents: 5—$22; 6—$23; 7—$24; 8—$25; 9—$26; 10—$28; 11—$30; 12—$32; 13—$34.

Bessemer ferrosilicon, Jackson county (Ohio) furnace, in per cents: 10—$30; 11—$32; 12—$34; 13—$36; 14—$38; 15—$40.50; 16—$43.

Coke

Foundries Continue Taking Fuel at August Rate—Furnace and Heating Coke in Better Demand

SUSTAINED demand for foundry coke is the noteworthy feature of the market. Specifications for beehive and by-product fuel are holding to the high levels reached in August. Several makers of beehive furnace coke report a slight improvement in orders, as yet insufficient to affect prices, which generally continue on a basis of $2.75. Demand for heating coke is picking up.

Pittsburgh, Sept. 11.—Demand and prices for beehive coke generally are unchanged, although some makers note a slight improvement in orders for furnace fuel. This is not reflected in prices, $2.75 continuing the usual quotation for good grades of furnace coke. Some inferior material is moving for less. Supplies continue moderate, lending support to current prices. Foundry coke demand is fairly steady, with $3.75 the usual minimum. Some demand for heating coke is beginning to appear, although the movement is not expected to assume much size for another month.

Production of coke in the Connellsville region for the week ended Sept. 1 was 31,500 tons, compared with 31,230 tons in the preceding week, according to the *Connellsville Courier.*

Boston, Sept. 11.—The improvement in demand for coke that developed in this district in July and August shows no letup, and it appears the last half of the year will be especially favorable for local ovens. One producer is considerably behind in shipments. Prices are unchanged.

New York, Sept. 11.—While the tendency in coke prices is upward, prices in the main are unchanged. They appear fairly representative at $2.75 to $2.85, ovens, equivalent to $6.66 to $6.76, delivered at Newark, N. J., for 48-hour beehive furnace coke, although the full range of prices reported is wider. By-product foundry coke is quoted at $9 to $9.40, Newark, with demand for this grade fair.

Cincinnati, Sept. 11.—By-product coke is moving in better volume this month. Foundry demand has expanded both in specifications and supplementary small orders until the volume is as strong, if not stronger, than that of the August movement. New River beehive coke is in such active demand that dealers are considerably behind in shipments. Prices are steady.

St. Louis, Sept. 11.—Coke specifications show moderate improvement since the first of the month. By-product interests report a fair volume of new orders. Shipments of industrial coke are holding up well. Prices are steady.

Birmingham, Ala., Sept. 11.—By-product coke works operation continues steady, though not at full capacity. Foundry coke is $5, base, Birmingham. Local consumption is slightly improved.

Coke Prices

Prices per Net Ton

Beehive Ovens	
Connellsville furnace	$2.75 to 3.00
Connellsville foundry	3.75 to 4.85
New River foundry	6.50 to 7.00
New River furnace	6.50
Wise county foundry	4.50 to 5.25
Wise county furnace	3.75 to 4.25
By-Product Foundry	
Newark, N. J., del.	9.00 to 9.40
Chicago, ovens	8.00
New England, del.	11.00
St. Louis, del.	9.00
Birmingham	5.00
Indianapolis, del.	8.25
Ashland, Ky.	7.00
Portsmouth, O.	7.00
Detroit, ovens	8.50
Buffalo, ovens	9.00

Ferroalloys

Specifications Continue Active—Prices Are Firm

Pittsburgh, Sept. 11.—Ferroalloy specifications continue at a good rate. Practically all users are taking their contracted tonnages, and in some instances high operating rates of steel producers have necessitated increases in the usual amount of supplies. Spot buying, however, is restricted, practically all activity being confined to contract business. Ferromanganese is unchanged at $105, duty paid, seaboard, with 50 per cent ferrosilicon quoted at $83.50 a gross ton, car lots. Demand for spiegeleisen is steady, with the $33 price firm. August business for a number of producers exceeded that of July.

New York, Sept. 11.—Spiegeleisen and ferromanganese are in fair demand, with carload lots the rule. Domestic producers of spiegeleisen are continuing to quote $33, furnace, for 19 to 21 per cent metal and $32 for 16 to 19 per cent. Ferromanganese prices also are unchanged. Shipments of special ferroalloys and nickel to steel mills, are running unusually large. Many of the specifications lately have been for quick shipment, indicating more rapid use than had been expected. The strength of the alloy steel market shows good backing for ferroalloys. Prices are unchanged, with practically all business in nickel and in ferroalloys against old contracts. Tungsten also has shown little change, with wolframite ore $10.85 a short ton unit, duty paid.

Chicago, Sept. 11.—Specifications for ferromanganese and 50 per cent ferrosilicon are holding up to the level of the past several weeks and are considerably ahead of a year ago. The price is steady for ferromanganese at $100, seaboard, or $112.56, delivered Chicago. Several sales of spiegeleisen are reported on the basis of $33, eastern furnace, or $40.76, delivered, Chicago, for 19 to 21 per cent material in carload lots. Several large users have covered for the remainder of the year, but the price paid for tonnage purchases has not been disclosed. The sale of foreign spiegeleisen was in the higher pencentages.

Steel Corp. Orders Gain Over July

Unfilled bookings of the United States Steel Corp. increased 53,116 tons in August, making for a total as of Aug. 31 of 3,629,042 tons. This was nearly 500,000 tons over Aug. 31, 1927. Comparisons follow:

Date	Total	Change, tonnage	Change, per cent	
Aug. 31, 1928	3,629,042	53,116	+ 1.4	+
July 31, 1928	3,570,927	66,082	— 1.81	+
June 30, 1928	3,637,009	220,187	+ 6.45	+
May 31, 1928	3,416,822	455,311	—11.7	—
Apr. 30, 1928	3,872,133	463,073	—10.7	—
Mar. 31, 1928	4,335,206	62,983	— 1.43	—
Feb. 29, 1928	4,398,189	122,242	+ 2.8	+
Jan. 31, 1928	4,275,947	303,073	+ 7.62	+
Dec. 31, 1927	3,972,874	518,430	+15.	+
Nov. 30, 1927	3,454,444	113,404	+ 3.39	+
Oct. 31, 1927	3,341,040	192,921	+ 6.1	+
Sept. 30, 1927	3,148,113	47,924	— 1.49	—
Aug. 31, 1927	3,196,037	54,023	+ 1.7	+
July 31, 1927	3,142,014	88,768	+ 2.8	+
June 30, 1927	3,053,246	2,305	+ 0.075	+
May 31, 1927	3,050,941	405,191	—11.7	—
Apr. 30, 1927	3,456,132	97,008	— 2.72	—
Mar. 31, 1927	3,553,140	43,979	— 1.22	—
Feb. 28, 1927	3,597,119	203,058	— 5.34	—
Jan. 31, 1927	3,800,177	160,792	— 4.5	—
Dec. 31, 1926	3,960,969	153,522	+ 4.1	+
Nov. 30, 1926	3,807,447	123,786	+ 3.36	+
Oct. 31, 1926	3,683,661	90,152	+ 2.50	+
Sept. 30, 1926	3,593,509	51,174	+ 1.42	+
Aug. 31, 1926	3,542,335	60,187	— 1.67	—

Every hour the American railroads load 5903 cars of freight.

Ferroalloy Prices

Ferromanganese, 78 to 82 per cent tidewater, duty paid	$105.00
Ferromanganese, del. Pittsburgh	109.79
Spiegeleisen, 19 to 21 per cent domestic furnace	33.00
*Ferrosilicon, 50 per cent, freight allowed, carloads	83.50
*Do., less carload	88.50
Do., 75 per cent	130.00 to 150.00
Ferrochrome, 66-70 chromium, 4-6 carbon, cts. per lb. con., del.	11.00
Do., for spot delivery	11.50
Ferrotungsten, stand., lb. cont.	96.00
Ferrovanadium, 30-40 per cent, per lb., contained, on analysis	3.15 to 3.65
Ferro-carbon-titanium carload, producers plant, net ton	200.00
Ferrophosphorus, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23-25% f.o.b. Anniston, Ala. (24 per cent)	122.50

*These prices contract; spot $5 higher.

Scrap

Better Demand Develops Short Supply, and Prices Rise—Dealers Slow to Contract

STRENGTH continues to accrue in iron and steel scrap. It develops that total offerings have been short this year and dealers with contracts are losing money. As a result they are wary about selling further tonnages. Melters are unwilling to pay as much as dealers are forced to give. Prices are generally higher.

Chicago, Sept. 11.—Iron and steel scrap continues strong with competition of dealers sustaining recent advances. Strength in other markets is making itself felt locally. Actual scarcities continue in some grades, and it is now realized that railroad releases this year have fallen materially below those in recent seasons. Considering all districts, it is estimated that scrap is scarcer than in a number of years. Dealers continue to take losses on meeting short obligations, and are hesitant about booking new business pending a closer determination of available supplies in the next few months. Some opinion prevails that the present stiff market may release considerable hoarded scrap. Heavy melting steel continues at $12.75 to $13.25, but it is reported that consumers have bought spot lots outside the district at as high as $14, delivered Chicago. Recent railroad offerings brought close to $14, on tracks. Railroad malleable is up 50 cents. A sale of cast borings is reported at $10.25, an advance of 25 cents from the recent top price. No. 1 railroad cast is up 50 cents.

Boston, Sept. 11.—The scrap mar-

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross tons delivered to consumers, except Detroit where dealers' buying prices are shown

Steel Works Scrap

HEAVY MELTING STEEL	
Birmingham	$10.25 to 10.75
Boston, dealers	10.25 to 10.75
Buffalo, No. 1	13.75 to 15.25
Buffalo, No. 2	12.25 to 12.75
Chicago	12.75 to 13.25
Cincinnati, deal.	12.00 to 12.50
Cleveland, No. 1	13.25 to 13.75
Cleveland, No. 2	12.75 to 13.00
Detroit, No. 1	11.75 to 12.25
Eastern Pa.	13.00
Eastern Pa., No. 2	11.00 to 11.50
Bethlehem deliv.	13.00
N. Y., deal., R. R.	9.25 to 9.85
N. Y., deal., yd.	9.85 to 10.50
Pittsburgh, No. 1	16.75 to 17.25
St. Louis, No. 1	12.00 to 12.50
St. Louis, No. 2	11.00 to 11.25
Valleys, No. 1	14.00 to 14.25
COMPRESSED SHEETS	
Buffalo	12.25 to 12.75
Chicago	11.50 to 12.00
Cleveland	12.50 to 13.00
Detroit	11.75 to 12.25
Pittsburgh	16.25 to 16.75
Valleys	14.00 to 14.50
E. Pa. new mat.	11.50 to 12.00
BUNDLED SHEETS	
Buffalo	8.25 to 8.75
Cincinnati, deal.	9.50 to 10.00
Cleveland	11.50 to 12.00
Eastern Pa.	11.00 to 11.50
Pittsburgh	14.25 to 14.75
St. Louis	7.75 to 8.25
SHEET CLIPPINGS, LOOSE	
Chicago	7.50 to 8.00
Cincinnati	9.00 to 9.50
Detroit	7.50 to 8.00
St. Louis	7.75 to 8.25
STEEL RAILS, SHORT	
Birmingham	10.50 to 11.00
Boston	8.25 to 8.75
Buffalo	16.00 to 16.50
Chicago	16.50 to 17.00
Cincinnati, deal.	15.75 to 16.25
Detroit	14.50 to 15.00
St. Louis	15.25 to 15.75
STOVE PLATE	
Birmingham	12.00 to 12.50
Boston, consumers	10.00
Buffalo	13.75 to 14.25
Chicago, net	11.50 to 12.00
Cinn., deal., net	8.50 to 9.00
Cleveland	12.00 to 12.50
Detroit, net	10.75 to 11.25
Eastern Pa.	11.50 to 12.00
N. Y., deal., mill	7.75 to 8.25
Pittsburgh	11.50 to 12.00
St. Louis	11.50 to 12.00
SHOVELING STEEL	
Chicago	12.75 to 13.25
Pittsburgh	12.00 to 12.50
St. Louis	11.00 to 11.25
KNUCKLES, COUPLERS SPRINGS	
Buffalo	15.75 to 16.25
Chicago	14.50 to 15.00
Eastern Pa.	15.50 to 16.00
Pittsburgh	17.50 to 18.00
St. Louis	12.25 to 12.75
LOW PHOSPHORUS	
Buffalo, billet and bloom crops	16.25 to 16.75
Cincinnati, deal.	12.75 to 13.25
Eastern Pa.	17.50 to 18.50
Pitts. billet and bloom crops	20.00 to 20.50
Cleve. billet and bloom crops	17.00 to 17.50
FROGS, SWITCHES, GUARDS	
Chicago	14.25 to 14.75
St. Louis	12.50 to 13.00
ANGLE BARS—STEEL	
Buffalo	14.00 to 14.50
Chicago	16.00 to 16.50
St. Louis	12.50 to 13.00

Iron Mill Scrap

RAILROAD WROUGHT	
Birmingham	9.50 to 10.00
Boston, dealers	8.50 to 9.00
Buffalo, No. 1	11.00 to 11.50
Buffalo, No. 2	14.00 to 14.50
Chicago, No. 1	12.90 to 13.45
Chicago, No. 2	12.75 to 13.25
Cinn., No. 2	11.50 to 12.00
Eastern Pa.	15.00
N. Y., No. 1 deal.	11.00 to 11.50
Pittsburgh, No. 1	13.50 to 14.00
Pittsburgh, No. 2	16.75 to 17.25
St. Louis, No. 1	9.50 to 10.00
St. Louis, No. 2	12.00 to 12.50
WROUGHT PIPE	
Boston, dealers	9.00 to 9.50
Eastern Pa.	14.00
Buffalo	12.00 to 12.50
New York, deal.	9.25 to 10.25
YARD WROUGHT	
Boston	8.00 to 8.50
Eastern Pa.	14.00 to 14.50
BUSHELING	
Buffalo	12.25 to 12.75
Chicago, No. 1	11.00 to 11.50
Chicago, No. 2	8.50 to 9.00
Cinn., No. 1 deal.	10.50 to 11.00
Cinn., No. 2	6.00 to 6.50
Cleveland, No. 2	9.75 to 10.00
Detroit, No. 1	10.25 to 10.75
St. Louis, No. 1	9.00 to 9.50
Detroit, mixed	7.25 to 7.50
MACHINE SHOP TURNINGS	
Birmingham	8.00 to 9.00
Boston	6.00 to 6.50
Buffalo	7.00 to 7.50
Chicago	7.00 to 7.50
Cincinnati, deal.	8.00 to 8.50
Cleveland	7.75 to 8.25
Detroit	7.25 to 7.75
Eastern Pa.	11.00 to 11.50
New York deal.	6.75 to 7.25
Pittsburgh	11.00 to 11.50
St. Louis	7.00 to 7.50
MIXED BORINGS, TURNINGS	
For blast furnace use	
Boston, dealers	5.75 to 6.25
Buffalo	9.50 to 10.00
Cincinnati, deal.	8.50 to 9.00
Cleveland	9.75 to 10.00
Detroit	8.25 to 8.50
Eastern Pa.	9.50 to 10.00
New York, deal.	6.25 to 6.75
Pittsburgh	11.50 to 12.00
CAST IRON BORINGS	
Birmingham, chem.	13.00 to 13.50
Birmingham, plain	8.00 to 9.00
Boston, chem.	9.50 to 10.00
Boston, dealers	6.00 to 6.50
Buffalo	9.50 to 10.00
Chicago	9.75 to 10.25
Cincinnati, deal.	8.50 to 9.00
Cleveland	9.75 to 10.00
Detroit	8.25 to 8.50
Eastern Pa.	10.50 to 11.00
Eastern Pa., chem.	14.50 to 15.00
New York, deal.	6.75 to 7.25
Pittsburgh	12.00 to 12.50
St. Louis	8.25 to 8.75
Valleys	13.50
PIPES AND FLUES	
Chicago, net	8.50 to 9.00
Cincinnati, deal.	7.50 to 8.00
St. Louis	9.00 to 9.50
RAILROAD GRATE BARS	
Buffalo	11.25 to 11.75
Chicago, net	12.25 to 12.75
Cincinnati	9.00 to 9.50
Eastern Pa.	11.50 to 12.00
New York, deal.	8.00 to 8.50
St. Louis	11.00 to 11.50
FORGE FLASHINGS	
Boston, dealers	7.50 to 8.00
Buffalo	11.50 to 12.00
Chicago	9.00 to 9.50
Cleve., over 10 in.	11.50 to 12.00
Detroit	9.50 to 10.00
Pittsburgh	13.00 to 13.50
FORGE SCRAP	
Boston, deal.	6.25 to 6.60
Chicago	16.00 to 16.50
Eastern Pa.	11.50 to 12.00
ARCH BARS AND TRANSOMS	
Chicago, net	20.00 to 20.50
St. Louis	18.25 to 18.75

Iron, Steel Works Scrap

AXLE TURNINGS	
Boston, deal	6.75 to 7.00
Buffalo	11.50 to 12.00
Chicago	9.75 to 10.25
Cleveland	12.50 to 13.00
Eastern Pa.	11.00 to 11.50
Pittsburgh	15.00 to 15.50
St. Louis	9.50 to 10.00
STEEL CAR AXLES	
Birmingham	16.00 to 17.00
Boston, ship point	14.00 to 14.25
Buffalo	16.50 to 17.00
Chicago	18.20 to 18.75
Cleveland	16.00 to 16.50
Eastern Pa.	19.00 to 20.00
Pittsburgh	18.50 to 19.00
St. Louis	18.00 to 18.50
SHAFTING	
Boston, ship. point	12.00 to 12.50
Chicago	17.35 to 17.90
Eastern Pa.	16.50 to 17.00
New York, deal.	14.50 to 15.00
St. Louis	16.50 to 17.00

Iron Foundry Scrap

CAR WHEELS	
Birmingham, iron	12.00 to 12.50
Boston, con.	14.00 to 14.50
Buffalo, iron	12.25 to 12.75
Buffalo, steel	15.50 to 16.00
Chicago, iron	13.00 to 13.50
Chi., rolled steel	16.00 to 16.50
Cincinnati	12.50 to 13.00
Eastern Pa., cast.	15.50 to 16.00
Eastern Pa. rolled	14.75 to 15.25
N. Y., iron, deal.	11.50 to 12.00
Pittsburgh, iron	15.50 to 16.00
Pittsburgh, steel	17.50 to 18.00
St. Louis, iron	13.00 to 13.50
St. Louis steel	13.00 to 13.50
NO. 1 CAST SCRAP	
Birmingham, cup.	13.00 to 13.50
Buffalo	14.25 to 14.75
Boston, textile	13.25 to 13.50
Buffalo	14.25 to 14.75
Chicago, mach.	16.24 to 16.80
Chicago, railroad	15.10 to 15.70
Chicago, agri.	14.30 to 14.85
Cincinnati, mach. cupolas, net deal.	14.25 to 14.75
Cleveland, cupola	16.00 to 16.50
Detroit, net	12.25 to 12.75
Eastern Pa. cupola	15.50 to 16.00
N. Y., cup., deal.	13.00 to 13.50
Pittsburgh, cupola	14.25 to 14.75
San Fran., del.	20.00 to 21.00
Seattle	14.50 to 15.00
St. Louis	13.00 to 13.50
Valleys	16.50 to 17.00
HEAVY CAST	
Boston	10.50 to 11.00
Buffalo, breakable	11.50 to 12.00
Cleve., breakable	12.25 to 12.50
Detroit, auto., net	17.00 to 18.00
Eastern Pa.	16.00
New York, deal.	12.00 to 12.50
Pittsburgh	13.00 to 13.50
MALLEABLE	
Boston, railroad	13.50 to 14.50
Buffalo	14.75 to 15.25
Chicago, agri.	12.25 to 12.75
Chicago, railroad	13.50 to 14.00
Cinn., R. R., deal.	12.25 to 12.75
Cinn., agri., deal.	11.75 to 12.25
Cleveland, agri.	15.00 to 15.50
Cleveland, rail.	15.00 to 16.00
Detroit, auto	14.50 to 15.00
Pittsburgh, rail.	14.00 to 14.25
St. Louis, agri.	11.50 to 12.00
St. Louis, rail.	12.00 to 12.50

Miscellaneous Scrap

RAILS FOR ROLLING	
5 feet and over	
Birmingham	10.50 to 11.00
Boston, dealers	9.25 to 9.50
Buffalo	13.50 to 14.00
Chicago	15.50 to 16.00
Eastern Pa.	14.50 to 15.00
New York	10.50 to 11.00
Pittsburgh district	16.00 to 16.50
St. Louis	13.00 to 13.50
LOCOMOTIVE TIRES	
Chicago, No. 1	13.50 to 14.00
Chicago, cut	16.00 to 16.50
St. Louis, No. 1	11.75 to 12.25
LOW PHOS. PUNCHINGS	
Chicago	14.50 to 15.00
Pittsburgh	16.50 to 17.00

ket has developed better strength and activity. New England owners are beginning to sell, now that the price range appears firmer. Most shipments are going to the Pittsburgh district. So far eastern Pennsylvania mills have not been a factor. There has been some buying for export, a steamer being expected to load and leave later in the month.

New York, Sept. 11.—Local scrap dealers' buying market continues strong, with advances of $1 in steel shafting and an increase of about 25 cents a ton in the outside price of No. 1 railroad steel. The latter reflects continued activity on the part of Pittsburgh dealers in this district. Virtually all buying is against back contracts, as little fresh consuming demand is reported. As is usually the case in an advancing market of this kind, supplies are being rather tightly held.

Philadelphia, Sept. 11.—Scrap is strongly buoyant with advances in several grades at mills. There is much competition among dealers for material to cover back orders for Claymont, Del. Some brokers are bidding as high as $15 to cover orders taken at $13. There is little fresh consuming demand.

Buffalo, Sept. 11.—Smaller receipts of heavy melting steel from outside sources are reported, strengthening this market somewhat although no new sales have been made to steelworks. Dealers are buying for old orders. A brisk business is being done in stove plate at $14, also in No. 1 cast. Yard movement is improving somewhat.

Cleveland, Sept. 11.—Activity largely is confined to dealers who still have to cover shorts. Because mills are not placing fresh orders at the higher levels thus reached, some sellers doubt they will hold. Others, however, feel confident general consumption is expanding to support the stronger markets. Mills are not yet willing to go as high as some of the dealers. Dealers here bid relatively high figures on the Pennsylvania railroad list but did not receive extensive awards. Similar bids were made on the Baltimore & Ohio list closing yesterday.

Pittsburgh, Sept. 11.—Heavy melting steel on the September scrap list of the Pennsylvania railroad is understood to have brought $17.08, Vandergrift. Some sales have been made at $17, Pittsburgh. Steel specialties are reported to have commanded more than $17.50. The entire list of scrap grades is stronger. Blast furnace material is higher, with transactions in cast iron borings at $12.50, and shoveling steel turnings and machine shop turnings quoted at the same figure. Sales of heavy breakable cast are reported at $13.50. Hydraulic compressed sheets are stronger, following a recent sale at $16.75. Iron car wheels are up 50 cents, and steel wheels have risen $1.50.

Cincinnati, Sept. 11.—The scrap market is generally stronger in this district with larger movement on specifications and on small private inquiry. The new prices on heavy melting steel have been stabilized and in some cases premiums are being offered on this item, now quoted at $12 to $12.50. Other new prices are holding well, advances of 25 to 50 cents being made on several grades.

Detroit, Sept. 11.—Strength in iron and steel scrap is increasing as dealers in other centers reach out for tonnages to fill contracts. Sales of railroad accumulations direct to melters have cut down supplies to dealers and short interests are bidding up in their effort to obtain material. Quotations on several grades have been advanced 25 cents. Demand seems on the increase and production has not expanded equally.

St. Louis, Sept. 11.—Though the volume of actual buying is not large, iron and steel scrap is firmer. Offerings by railroads and other sources have fallen off, and it is harder to purchase scrap than for some time.

Birmingham, Ala., Sept. 11.—Considerable old material is moving though the market is not reported stronger. Recent readjustment of prices has had little effect. One important buyer of heavy melting steel continues offering a price below quotation shows and is getting tonnage.

Toronto, Ont., Sept. 11.—The general improvement in pig iron and the iron and steel markets has been reflected in stronger demand for iron and steel scrap. Local dealers report increased sales for the week. Buyers are more numerous and tonnages exceed those of any former week since July 1. Hamilton, Ont., consumers are ordering both for spot and future delivery, with the result that contract placing, which has been practically at a standstill for some time, is now a feature.

Canadian Scrap

Dealers' Buying Prices

MONTREAL

Per Gross Ton

Iron axles	$22.00
Steel axles	20.00
Car wheels	16.00
Stove plate	13.00
Wrought pipe	5.00
Turnings	5.00
Heavy melting steel	7.00

TORONTO

Steel axles	13.50 to 14.00
Iron axles	15.50 to 16.00
Heavy melting steel	8.00 to 8.50
Turnings	6.50 to 7.00
No. 1 mach. cast (net)	14.50 to 15.00
Malleable, (net)	12.50 to 13.00
Stove plate (net)	8.50 to 9.00

Natural gas yields 1.4 pounds of carbon black per 1000 feet.

Semifinished

Books Opened for Fourth Quarter, but Price of Sheet Bars Is Not Clarified

WHILE some producers of sheet bars, billets and slabs have opened their books for fourth quarter, naming specific prices, others are "marking time" and profess to be uncertain for the present. Makers in the Pittsburgh district are naming $33 on all three grades, while some valley mills quote $34 for sheet bars. Contracting for fourth quarter is not heavy.

SEMIFINISHED STEEL PRICES, PAGE 652

Pittsburgh, Sept. 11.—Producers have opened their books for fourth quarter on semifinished steel, naming 33 on billets, slabs and sheet bars. Wire rods are quoted at $42 for fourth quarter. Specifications continue at the active rate that prevailed during August. Forging billets continue at $38.

Youngstown, O., Sept. 11.—Sales of billets, slabs and sheet bars have picked up appreciably with valley producers in the past week and a good volume of new business is being placed on the books at unchanged quotations for the fourth quarter. Specifications for October delivery of sheet bars and strip-mill sizes of billets are encouraging. One maker is asking $34, Youngstown and Pittsburgh, for 4 x 4-inch billets, blooms and slabs, and $33 for sheet bars; while another producer is asking $33 for all four products.

Cleveland, Sept. 11.—Specifications for sheet bars, billets and slabs continue at the recent high rate, and the leading local merchant producer still operates 13 of its 14 open hearths. This interest states that it has not named prices for fourth quarter as yet. While there is a stronger tendency in the market and some valley makers are understood to be quoting $34 on sheet bars, the price situation has not been clarified by recent sales.

Ingot Rate Unchanged as Stack Goes Out

Chicago, Sept. 11.—Steelworks blast furnace output again has been reduced by the blowing out of No. 8 furnace of the Illinois Steel Co., at South Chicago, for relining. This leaves 23 of the 36 steelworks stacks active in the district. It is understood, however, that the withdrawal of this furnace has little or no effect on the ingot rate for the district, which continues at 80 per cent. The active furnaces are producing individually heavier tonnages of steelworks pig iron, and in addition steel plants are using heavier tonnages of scrap, it is stated.

Bars

Specifications Rushed to Mills for Third Quarter—Prices Being Held at Firm Levels

ENFORCEMENT in some districts of the rule that third quarter specifications must be in by Sept. 10 has resulted in heavy tonnages being specified. Mills have large backlogs and some sections are considerably behind in delivery. Fourth quarter prices are firm and all mills are taking some tonnage for that delivery, though books are not formally opened.

BAR PRICES, PAGE 651

Chicago, Sept. 11.—Users of bar products have specified during third quarter to the limit of their expected requirements. The privilege of specifying against third quarter obligations was withdrawn, beginning Sept. 10, except to buyers whose previous orders were deferred by lengthened deliveries. Automotive specifications help sustain a steady operating rate, and the farm implement business, particularly tractors, is the second important source of bar consumption. Jobbers are taking good shipments also. The fact that several automobile makers actually are increasing schedules for this month and next is encouraging to steel producers. Current specifications and sales of bar mill products are holding well to the average of the year. The end of third quarter specifying is driving in a flood of orders, which will be reflected more accurately in next week's sales reports. Mills are 30 days behind in deliveries on some bar sections. While mills may not formally open fourth quarter books, a few sales covering delivery over part of the final period have been made on the basis of 2.10c, Chicago, it is stated by mills. Nevertheless, the chief interest of buyers is for immediate specification.

Rail steel bar mills are enjoying a slight increase in the volume of business. Both Chicago Heights mills are operating full turn. Rail steel bars are quoted at 1.85c to 1.90c to the manufacturing trade. Bar iron is steady at 2.00c, Chicago.

New York, Sept. 11.—Heavy specification against contracts expiring yesterday featured the steel bar market here over the past few days. A price of 2.00c, Pittsburgh, is now being quoted generally on fourth quarter business, although there is a disposition to allow preferentials in the case of a few consumers.

Pittsburgh, Sept. 11.—Soft steel bar producers have started to take contracts for fourth quarter. Producers state they are firm at 2.00c although some specifications still are being received on lower-priced contracts. Specifications fail to show signs of slackening, most consumers continuing to buy at the steady rate which characterized August. Cold bar finishers are supplying a substantial share of the current demand.

Buffalo, Sept. 11.—All sellers are quoting fourth quarter bars at 2.10c, Lackawanna, and claim rigid adherence to this price. Some steelworks units in this district are booked close to capacity for October, it is reported. Operations are 85 to 90 per cent of capacity.

Cleveland, Sept. 11.—Specifications against soft steel bar contracts have been unusually heavy the past week, owing to the deadline set by producers. While some consumers have anticipated their needs on account of the stiffer price situation, little speculative buying is believed to have been done. Automotive requirements in this district have been expanding and parts makers are at capacity. A few fourth quarter contracts have been closed at the advanced price. The Cleveland base on soft steel bars for fourth quarter is 1.95c to 2.05c.

Philadelphia, Sept. 11.—Steel bar sellers are quoting 2.00c, Pittsburgh, for fourth quarter. Specifications against remaining third quarter contracts are heavy.

Cleveland to New York Barge Service Begun

All-water service between Cleveland and New York for freight is being tried. A motor ship operated by the Erie & St. Lawrence Corp. cleared from Cleveland Sept. 5 for New York via the New York barge canal. Additional sailings are scheduled from the West Ninth street pier at Cleveland Sept. 20 and Oct. 1. The motor ships to be tried on this route have a capacity of about 1600 tons and are scheduled to arrive in New York six days after clearing from Cleveland. The Cleveland chamber of commerce is quoting rates for this service.

The Electric Hoist Manufacturers association will hold its opening fall meeting at Hotel McAlpin, New York, Sept. 20. Regular monthly meetings were discontinued during the vacation season.

Plates

General Manufacturing Lines Active—Large Pipe Line Tonnage Awarded

ABOUT 100,000 tons of plates and shapes has been distributed to mills in the Chicago district by a Milwaukee manufacturer, for the Texas Co.'s 450-mile pipe line. Recent Great Northern orders for cars and underframes call for about 16,000 tons of plates and shapes. Contracting for fourth quarter at the new prices is light. Other railroad inquiries are expected soon.

PLATE PRICES, PAGE 651

Chicago, Sept. 11.—General manufacturing demand for plates, including that of small tank makers, forms much of the present volume of plate buying, in the absence of oil tankage. About 3000 tons of tank plates were closed during the week, but little tankage is on inquiry. A Milwaukee manufacturer has distributed about 100,000 tons of plates and structurals to the mills in this territory for the order of 450 miles of 24-inch pipe for the Texas Co., which also has asked bids on 25,000 tons additional of 4 to 12-inch pipe. Oil tank business has increased about 50 per cent in the past two or three years in this market. The Great Northern order for cars and underframes will take about 16,000 tons of plates and structurals. Except to preferred industries having special contracts, third quarter specifications ceased yesterday, and mills are seeking to establish 2.10c for fourth quarter.

New York, Sept. 11.—Some eastern plate mills have fixed Sept. 30 as the final date for specifying against third quarter contracts. Meanwhile, the market continues 2.05c, base, Coatesville, equivalent to 2.225c, delivered, New York, or $2 a ton under the price scheduled to go in effect for the fourth quarter. Sellers report demand over the past few days has lagged somewhat, although back specifications appear to be coming out freely, with some eastern plate mills operating as high as 75 per cent. A substantial tonnage of plates will be required for the No. 2 concrete tunnel, on which the local department of water supply will open bids Sept. 25. Some railroad inquiries are expected soon.

Pittsburgh, Sept. 11.—Demand for plates continues steady although not quite up to the rate experienced by merchant steel bar producers. Contracts are being taken for fourth quarter at 2.00c, base, Pittsburgh, although specifications are being received in some instances up to Sept. 15 at 1.90c

and lower. A fair volume of business still being received for oil country.

Cleveland, Sept. 11.—Steel plate requirements continue relatively lighter than those for bars or shapes. Some tonnage was driven in by the Sept. 10 deadline on third quarter specifications but some makers are not adhering rigidly, one taking specifications to Sept. 30 for immediate shipment. Plates are 1.90c to 2.00c, Pittsburgh.

Philadelphia, Sept. 11.—Contract business in plates continues to move at 2.00c, base, Coatesville, with fourth quarter prices still to be definitely settled. Specifications are brisk.

CONTRACTS PLACED

330 tons, 32-inch welded pipe line, Tacoma, Wash., to Birchfield Boiler Co.
175 tons, water main extension, Tacoma, Wash., to Steel Tank & Pipe Co.
105 tons, 56-inch riveted pipe, Belle Fourche project in South Dakota for United States bureau of reclamation, Denver, to Western Pipe & Steel Co., San Francisco.

CONTRACTS PENDING

7200 tons, 24 to 44-inch welded pipe, East Bay municipal utility district.
150 tons, five 80,000-barrel tanks for Shell Oil Co., San Francisco; bids being received.
Three lightships for government; Charleston Ship & Engine Co. low bidder.

Bolts, Nuts, Rivets

Specifications Made Freely—Last Quarter Contracts Delayed

NUT AND BOLT PRICES, PAGE 652

Pittsburgh, Sept. 11.—Most consumers are specifying fairly freely for bolts, nuts and rivets, railroads being the notable exception. Large rivets generally are firm at 2.90c, Pittsburgh, although some shading of this figure is heard. Bolts and nuts are firm at 70 off.

Philadelphia, Sept. 11.—Trading in bolts and nuts is fairly brisk, although railroads have not yet bought on the scale anticipated. Meanwhile prices are firm at 70 off list to large buyers and 60 off to smaller. Rivets are stronger at 2.90c, though lower is still offered in some quarters.

Cleveland, Sept. 11.—Sellers of nuts and bolts are more inclined to sidestep business offered to them at less than the usual 70 per cent off.

Chicago, Sept. 11.—Fourth quarter contracting for bolts, nuts and rivets is now under way, with prices on all classes of bolts and nuts, and structural and small rivets, unchanged. Specifications have fallen off slightly since the beginning of the month but a part of this is attributed to the holiday. Farm implement users are specifying at a gratifying rate. Quotations for fourth quarter are 60 to 70 off for carriage and machine bolts, 70 to 70 and 10 off for small rivets, and 3.00c, Chicago, for structural rivets in carload lots.

Pipe

Three Makers in 45,000-Ton Sinclair Order—Merchant Demand Fair—Cast Buying Slow

THREE tubular products mills have improved their operating positions through the sharing of a 45,000-ton line pipe order from the Sinclair Oil Co. Merchant buying is fair although under normal seasonal rate in some jobbing districts. Cast pipe was unusually inactive, no inquiries or contracts of size being reported during the week.

PIPE PRICES, PAGE 652

Pittsburgh, Sept. 11.—Sinclair Oil Co. is reported to have placed 45,000 tons of 8, 10 and 12-inch pipe for a line from Drumright, Okla., to Whiting, Ind., with three makers. National Tube Co. is understood to have taken 25,000 tons and Jones & Laughlin Steel Corp. and Bethlehem Steel Co. each 10,000 tons. General demand for merchant steel pipe continues satisfactory. The recent increase in oil drilling activities provides a fair volume of business.

Boston, Sept. 11.—The only award for pipe in the past week involved 100 tons of 6 and 8-inch for Revere, Mass., placed with Warren Foundry & Pipe Co. Private business, which dropped off sharply preceding Labor day, took a sudden spurt and in the past week proved good. Prices show firmness in the smaller sizes, with slight concessions still available on favorable tonnages of larger diameters.

New York, Sept. 11.—Featuring the tubular market is the award of 45,000 tons of line pipe for the Sinclair Oil Co. Bids will be open Sept. 19 on approximately 15,000 feet of 48 and 60-inch steel pipe for Detroit.

Cast pipe demand is quiet, with bids recently closed on 3000 feet of 8-inch centrifugal pipe for the Panama Canal commission, Washington. It is now learned that the lump sum price quoted by R. D. Wood & Co. on 150 tons of 4, 6, and 8-inch class C pipe for Camp Devens, Ayer, Mass., was around $37, delivered.

Youngstown, O., Sept. 11.—The bringing in of a 700-barrel oil well last week near Muskegon, Mich., at 2700 feet has added to a small "boom" excitement in the Saginaw-Muskegon district where the Pure Oil and Sun companies as well as local contractors have shown interest in the past several months. It is understood here that the order for Sinclair pipeline to Kansas City, 325 miles, has been divided between National Tube and Jones & Laughlin. It is believed the Prairie Oil & Gas line for 60 miles and the Independent Oil line for 24 miles still are to be awarded.

Cleveland, Sept. 11.—Jobbers are increasing their tonnage acceptances somewhat and are building up their stocks. The movement of standard full weight merchant pipe from the mills is supported by the sustained building activity. The pipe for the Union Terminals building, about 150 tons together with approximately 200 tons of conduit will be furnished by a Mahoning valley mill.

Chicago, Sept. 11.—Few municipal projects for cast iron pressure pipe are out. A fair volume of small-lot orders continues. Contractors are cleaning up their summer's work and are looking for light projects to round out the season's activity. Portsmouth, O., will take bids next week for 500 tons of 20-inch pipe. Quotations are steady at $42.20 to $43.20, delivered, Chicago, for 6 to 24-inch.

Birmingham, Ala., Sept. 11.—Production of pipe is steady. One shop is down but others operate on an average of 85 per cent. Pressure pipe price base is firm at $34 to $35 on 6-inch and over sizes. Shipments equal the make, no pressure pipe being on yards to fill excess orders.

CONTRACTS PLACED

45,000 tons, 8, 10 and 12-inch steel pipe for line from Oklahoma to Whiting, Ind. for Sinclair Oil Co., reported divided between National Tube Co., 25,000 tons; Jones & Laughlin Steel Corp., 10,000 tons; and Bethlehem Steel Co., 10,000 tons.
7000 lineal feet 6-inch and 2000 lineal feet 8-inch DeLavaud centrifugal pipe, Appleton, Wis., to James B. Clow & Sons Co.
1062 tons, 6 and 8-inch class 150, Spring Valley Water Co., San Francisco, to unnamed interest.
320 tons, 2 to 16-inch class B, Santa Ana, Calif., to American Cast Iron Pipe Co.
149 tons, 2 and 4-inch class B, improvement Fig street, Compton, Calif. General contract to George H. Oswald, Los Angeles.
148 tons, 6 to 10-inch class C, improvement Garnet street, San Diego, Calif. General contract to R. E. Hazard Contracting Co.
100 tons, 6 and 8-inch pipe, Revere Mass., to Warren Foundry & Pipe Co.

CONTRACTS PENDING

25,000 tons, 4 to 12-inch pipe, for the Texas Co.
3000 feet, 8-inch centrifugal pipe, Panama Canal commission, Washington; bids in.
1236 tons, 4 to 10-inch class B, Edmonds, Wash., United States Cast Iron Pipe & Foundry Co. low.
1210 tons, 32-inch pipe, improvement East Eleventh and Taylor streets, Tacoma, Wash., went welded steel pipe.
752 tons 42-inch plain, 72 tons 42-inch lugged pipe and 34 tons, of special for Milwaukee; bids close Sept. 12.
500 tons, 20-inch pipe for Portsmouth, O.; bids asked.
355 tons, 4 to 10-inch class B, improvement Encanto district, San Diego, Calif. Miracle

Construction Co. low on general contract.
258 tons, 20 and 30-inch class 250, San Bernardino, Calif. Went welded steel pipe.
200 tons, 6 and 8-inch pipe for Centerline, Mich.; bids in.
148 tons, 2 and 4-inch class B pipe, Compton, Calif. All bids rejected.
133 tons, 4 and 6-inch class B, El Monte, Calif.; bids opened.

Tin Plate

Specifications Slower—Japan Buying 74,000 Boxes

TIN PLATE PRICES, PAGE 651

Pittsburgh, Sept. 11.—Tin plate specifications have declined further following the usual seasonal trend, although the slump in buying by canmakers has not been followed by other consumers. The latter generally are specifying fairly actively. Operations of some interests also have fallen off, although the leading producer still is running at its previous rate.

New York, Sept. 11.—Nippon Oil Co. has placed contracts with Mitsui & Co. and the Mitsubishi organization for 54,000 base boxes of tin plate, which business, it is believed, will likely be distributed among several producers in this country. Asano & Co., 165 Broadway, are negotiating with both domestic and English producers on about 20,000 base boxes of tin plate for the Japanese army, previously noted as pending.

Refractories

Small Buying Aggregates Well—Prices Continue Firm

REFRACTORIES PRICES, PAGE 652

Pittsburgh, Sept. 11.—Demand for refractories generally is confined to routine business. Total sales are well maintained to the level of previous months, but large-lot buying is absent. Current activity generally is at about the rate of a year ago. Prices continue firm, with first quality fire clay and silica brick $43 to $46, and chrome brick $45. Continued high activity in steelmaking operations is looked to as a factor providing a favorable outlook for business over the remainder of the year.

Founders Plan Exhibit

The Electric Steel Founders' Research Group, which is composed of the Fort Pitt Steel Castings Co., McKeesport, Pa., Lebanon Steel Foundry, Lebanon, Pa., Sivyer Steel Casting Co., Milwaukee, Michigan Steel Castings Co., Detroit, and the Nugent Steel Castings Co., Chicago, plans to exhibit at the National Metal exposition to be conducted by the American Society for Steel Treating at Philadelphia, Oct. 8-12. The castings shown will illustrate the kinds of products made by group foundries. The exhibit will be in charge of R. A. Bull, research director.

Sheets

Specifications Heavy on Third Quarter Contracts—Consumers Reluctant to Close for Fourth

NEW sheet prices for fourth quarter have not been fully tested, buyers showing reluctance to close at this time. Meanwhile all consumers are specifying heavily on third quarter contracts, and spot orders also are active. While Sept. 10 was to be the "deadline" for third quarter specifications, some makers have extended the time. Automotive needs continue heavy.

SHEET PRICES, PAGE 651

Pittsburgh, Sept. 11.—Sheet producers reports a steady rate of specifications. Backlogs are comfortably large although considerable of the current activity may be traced to buyers' attempts to avoid higher prices and the reduction in cash discount. Practically all consuming lines are specifying actively, a feature of the current demand being the heavy buying by agricultural implement makers. A few of these companies have bought larger tonnages of sheets so far this year than in any previous twelve months of their history. Producers state that a larger number of users than ever before are contracting for fourth quarter. This is seen as an attempt to protect users against further price increases. Mills here quote 2.65c, Pittsburgh, on black sheets, 2.00c on blue annealed, 3.50c on galvanized, 4.00c on autobody, and 2.90c on tin mill black.

Philadelphia, Sept. 11.—Sheet specifications continue heavy, while prices generally are unchanged. The tendency, however, is upward. Blue annealed sheets are 2.00c to 2.10c, base, Pittsburgh. Black sheets now appear firm at 2.65c, and galvanized at 3.45c.

Buffalo, Sept. 11.—To date there have been no concessions from the higher sheet prices now being quoted by all sellers, it is claimed here. Numerous sales for September and fourth quarter shipment, mainly the latter, have been made at the advanced prices. Sheet mills in the district continue to operate at 85 to 90 per cent.

Youngstown, O., Sept. 11.—The continued influx of new orders and specifications for all grades of sheets, especially for common black and autobody, is maintaining sheet mill production at high rates. This week the mills are producing at around 88 per cent, against 89 per cent last week. Pressure continues strong for prompt deliveries of autobody material. Because of insistence by consumers upon prompt deliveries, mill managers here express doubt that users are specifying in volume in order to get under the wire by Oct. 1 on the new advanced prices and the one-half of 1 per cent discount. They say it looks to them like new actual business of larger volume, because under their September contracts they propose to allow the old discount on October carry-over until fulfilled if the 2 per cent discount be specified in those original contracts. However, they do not consider this an "extension" such as has been rumored. Quotations on all grades of sheets have firmed up. The flat price of 2.75c is asked for common black, 4.00c for autobody, 3.60c for galvanized and a minimum of 2.00c for blue annealed. Sales are being made at these figures for October delivery.

Cleveland, Sept. 11.—Mill backlogs gradually are being extended as sheet bookings mount. One mill manufacturing highly finished material is now naming week of Oct. 29 deliveries. While there has been a general disposition to limit specifications to Sept. 10, one or two extended the time to Sept. 15, and while it has been the understanding all shipments would be enroute by Sept. 30, some mills latterly have accepted orders to be shipped "at mill's convenience." The greater percentage of orders placed this month has been at the old figures. Current quotations are 2.75c, Pittsburgh, on black; 2.00c to 2.10c on blue annealed; 3.60c on galvanized and 4.00c on autobody. On black some 2.65c and 2.60c levels have not entirely disappeared and on galvanized 3.50c occasionally appears.

Chicago, Sept. 11.—Sheet buyers are making a scramble to get third quarter specifications in on pending contracts, partly because of the higher prices quoted on black and galvanized for fourth quarter, and also because of the fact that the 2 per cent discount for cash will be eliminated beginning with Oct. 1 shipments. Considerable resistance to the new discount is being made by jobbers. The one-half of 1 per cent will go into effect promptly, however, sheet producers say. Backlogs are being extended steadily in black, galvanized and blue annealed. In the latter, specifications run four to five weeks. Warm weather still is interfering with production. Books are open for fourth quarter and some business has been taken at the new prices. Chicago delivered quotations on current business are 2.80c for No. 24 black; 3.65c for No. 24 galvanized; and 2.15c for No. 10 blue annealed.

St. Louis, Sept. 11.—New orders for sheets continue at the satisfactory rate prevailing in August, and further improvement in specifications is reported. Blue annealed sheets lead in activity. Prices are steady.

Structural Shapes

Shape Mills Report Active Specifications Practically Every Section—Loft Building New York Takes 8100 tons

MILL specifications from structural shape fabricators have gathered impetus since the Labor Day holiday. This tonnage has applied against the lower-priced contracts, fourth quarter figure of 2.00c not yet having received full test. Awards this past week have involved attractive tonnages such as 8100 tons at New York; 2475 tons at Kearny, N. J. Recent awards at Pittsburgh and other points, however, have been relatively small; Boston reporting a total of only 500 tons. Plenty of work is on architect's boards and probably will reach the bidding stage before the winter. Fresh inquiry at Chicago seems to be confined to bridges, but at New York 4000 tons will be required for a tunnel. Bridgework at Toledo, O., takes 3600 tons.

STRUCTURAL SHAPE PRICES, PAGE 651

New York, Sept. 11.—Outstanding among local structural awards is 8100 tons for a garment center building, with a leading inquiry involving 4000 tons of miscellaneous work in connection with a 20-mile concrete tunnel for the local board of water supply. A plant addition at Kearny, N. J., for Western Electric Co. involving 2500 tons, has been placed. Mills report specifications as unusually heavy as time is at hand when higher prices are expected to prevail. While the announced $2 advance on shapes for fourth quarter has yet to be put to a test, trade interests generally are agreed that prices will be higher.

Structural steel board of trade reports the placing of 44,343 tons in the metropolitan district in August, against 71,000 in July. This is exclusive of bridges, subways, piers and similar work.

Boston, Sept. 11.—The week did not prove important for structural interests, 500 tons being the aggregate in awards. A 175-ton theater building at Greenfield, Mass., was awarded the Palmer Steel Co., while the 350 tons for the new hospital building at Waltham, Mass., went to the A. L. Smith Iron Works.

Pittsburgh, Sept. 11.—Specifications for plain structural shapes are well maintained. Recent awards generally have been small but most fabricating shops are busy. An increase in inquiry presages a fairly active fourth quarter. Producers are booking fourth quarter contracts and have announced 2.00c as minimum. Some tonnage, however, still is moving on the lower-priced third quarter contracts.

Chicago, Sept. 11.—Fabricating shops have been specifying actively for plain structural material under third quarter obligations which now expire. Fresh structural inquiry is not heavy and is confined largely to bridge work. Fabricators have built up stocks to some extent and material in their hands in heavier than in any other line of finished steel. The price is 2.00c, Chicago, except for preferred work.

Cleveland, Sept. 11.—Fabricators report a post-vacation pickup in inquiries for structural shapes. Much of this tonnage if not all of it, will wind up old contracts at 1.90c or less. So far little has been booked at the fourth quarter figure of 2.00c. The tonnage for the building for the Goodrich Rubber Co., Akron, O., was erroneously reported last week as going to the Fort Pitt Bridge Works. The general contract has been let to the Carmichael Construction Co., and the steel has been divided between the Carnegie and Bethlehem Steel companies, Berger Iron Works, Canton, O., doing the fabrication.

Philadelphia, Sept. 11.—While the $2 advance on shapes is effective today, the situation remains to be tested. The trend, however, is definitely upward. Minimum base price now is 2.05c, Pencoyd. Meanwhile, where contracts do not call for specification of third quarter tonnage by Sept. 10, remainder of month will be allowed. While several heavy tonnages hang over the market, fresh inquiry is relatively light, with sizable awards.

Awards Compared

	Tons
Awards this week	26,282
Awards last week	38,860
Awards two weeks ago	15,669
Awards this week in 1927	37,629
Average weekly awards, Aug	34,957
Average weekly awards, 1928	30,314
Total awards to date, 1927	1,335,570
Total awards to date, 1928	1,394,328

CONTRACTS PLACED

8100 tons, garment center building, Seventh avenue and Thirty-eighth street, New York, to Levering & Garrigues Co.

4000 tons, building, Goodrich Rubber Co., Akron, O., to Berger Iron Works, Canton, O., through Carmichael Construction Co., Akron, O., general contractor. Steel divided evenly between Carnegie Steel Co. and Bethlehem Steel Co.

2500 tons, plant for United States Gypsum Co., East Chicago, Ind., to American Bridge Co.

2475 tons, extensions to building, Western Electric Co., Kearny, N. J., to McClintic-Marshall Co.

1380 tons, 13-story apartment, Sixty-ninth street and Central Park, west, New York, to Hinkle Iron Co.

1100 tons, West Side high school, Altoona, Pa., to Jones & Laughlin Steel Corp.

1050 tons, four bridges for the Chicago sanitary district, Chicago and Evanston, Ill.; erecting contract to Chicago Steel Construction Co.

900 tons, grade crossing elimination, Pere Marquette railroad, Fordson, Mich., to American Bridge Co.

620 tons, warehouse extension, Congoleum Inc., Philadelphia, to American Bridge Co.

600 tons, state highway bridges, New York, to unnamed fabricator.

600 tons, Exposition building, Los Angeles county, Pomona, Calif., to McClintic-Marshall Co.

535 tons, hotel, Geary street, San Francisco, to McClintic-Marshall Co.

500 tons, University of Pennsylvania hospital, New York, to American Bridge Co.

500 tons, factory building, Mengle Body Co., Louisville, Ky., to Louisville Bridge & Iron Co.

500 tons, bridge at West Forty-third street, Chicago, to Mt. Vernon Bridge Co.

450 tons, fur warehouse, West Twenty-eighth street, New York, to A. E. Norton Inc.

432 tons, bridge for Pacific Electric railway, Los Angeles river at Glendale boulevard, Los Angeles, to McClintic-Marshall Co.

400 tons, Erie railroad bridge, Youngstown, O., to Jones & Laughlin Steel Corp.

350 tons, Waltham, Mass., hospital building, to the A. L. Smith Co. Iron Works.

350 tons, cable plant, Rome Wire Co., Mobile, Ala., to Ingalls Iron Works Co. Inc.

320 tons, Richland Savings bank, Mansfield, O., to Forest City Structural Steel Co.

300 tons, Sewickley Valley hsopital, Sewickley, Pa., to Jones & Laughlin Steel Corp.

300 tons, state bridges, Vermont, to American Bridge Co.

280 tons, three bridges, New York Central railroad, Harlands divisions, to unidentified interest.

265 tons, New York Central railroad, Haven yards, to unidentified interest.

250 tons, bridge over Coldwater river, near Bronson, Mich., erecting contract to Elkhart Bridge & Iron Co.

250 tons, Rockefeller institute of medical research, New York, to Hedden Iron Construction Co.

210 tons, plant for Boeing Airplane Co., Seattle, to Austin Co.

200 tons, high school, Grantfille, N. Y., to McClintic-Marshall Co.

190 tons, advanced aircraft hangar, Troy, O., to Massillon Bridge & Structural Co.

175 tons, Greenfield, Mass., theater building, to Palmer Steel Co.

150 tons, building for Knapp Mfg. Co., Joliet Ill., to A. Bolter's Sons.

150 tons, apartment, Leavenworth and Chestnut streets, San Francisco, to Golden Gate Iron Works.

145 tons, building, Ames Shovel & Tool Co., North Easton, Mass., to unidentified interest.

120 tons, schools, Hamilton, O., through A. Benzing & Sons, general contractors, to Massillon Bridge & Structural Co.

115 tons, deck plate girder spans, Missouri Pacific railroad, to unidentified interest.

100 tons, including superstructure, Breathitt county bridge, Kentucky, to Vincennes Bridge Co.

The Market Section

CONTRACTS PENDING

5000 tons, buildings for Goodyear Tire & Rubber Co., Akron, O.; bids being taken.
4200 tons, bridge over Atchafalaya river, Louisiana, for Texas & Pacific railroad; recently reported awarded but job has been reopened.
4000 tons, concrete tunnel No. 2, board of water supply, New York, contractors' bids opened Sept. 25.
3600 tons, bridge improvements over Maumee river, Toledo, O., for Toledo Terminal Railroad Co.; bids being taken.
3000 tons, building for Patterson estate, La Salle street and Wacker drive, Chicago; Hegeman-Harris Co., Chicago, contractor.
2000 tons, George Washington hotel, Twenty-third street and Lexington avenue, New York, pending; previously noted as involving an unstated tonnage.
2000 tons, alterations to Macey store, New York, general contract to Marc Eidlitz.
2000 tons, Professional building, Kansas City, Mo.
1200 tons, highway bridge, Grand Forks, N. D.
1200 tons, bridge, Tom Bigbee river, Alabama; general contract to U. G. I. Contracting Co.
1200 tons, Lewis building, Fifteenth and Locust streets, New York. Bids taken.
900 tons, government structure at Honodulu; bids being taken.
500 tons, widening Park avenue, Fifty-seventh to Seventy-second street, New York.
500 tons, highway bridges, Illinois.
500 tons, Majestic building, Indianapolis.
500 tons, Olympic hotel addition, Seattle; bids soon.
450 tons, machine shop, Chevrolet Motor Co., Flint, Mich., to Flint Structural Steel Co.
450 tons, Sand Point hangar, Seattle; bids Sept. 5.
400 tons, state highway bridges, New Jersey.
350 tons, 4-story commercial building, Fourth avenue and Thirtieth street, New York.
250 tons, school, Chicopee, Mass., general contract placed.
250 tons, addition, Willys-Overland Co., Central avenue, Toledo, O.; general contract to A. Bentley & Sons Co.
230 tons, Kalama River bridge, Olympia, Wash. Bids received.
170 tons, Jackson Creek spillway, East Bay municipal utility district, Oakland, Calif.; bids received.
125 tons, church, Springfield, Mass.; permit issued.
130 tons, Pacific Coast Cement Co. plant, Seattle. Bids received.
120 tons, Coweeman river bridge, Olympia, Wash; bids received.
100 tons, garage, Springfield, Mass.; permit issued.
100 tons, addition, Ferro Enameling Co., Cleveland; general contract to P. Kirschner Co.
100 tons, 56-suite apartment, Van Sweringen Co., Shaker Square development, Cleveland; plans being completed by Small & Rowley, architects.
100 tons, buildings at Newark and Bedford, O., Pennsylvania railroad; bids being taken.

Ore Imports Large

Philadelphia, Sept. 11.—The following importations were received at this port in the week ending Sept. 8: 3763 tons of chrome ore from Cuba, 32 tons steel scrap from Germany, 44 tons steel bars from Germany, 45 tons from France and 93 tons from Sweden, 56 tons of steel billets from Sweden, 10 tons of steel bands, and 44 tons of structural shapes from Belgium.

C. E. Dinkey is Buried

Pittsburgh, Sept. 11.—Charles E. Dinkey, formerly superintendent of the Edgar Thomson works of Carnegie Steel Co., who died last Saturday, was buried today. He was a brother-in-law of Charles M. Schwab, who attended the funeral. A. C. Dinkey, president of the Midvale Co., is a brother.

Concrete Bars

Market Being Prepared for Price Increase—Chicago Rail Steel Makes Record

FABRICATORS and consumers of concrete reinforcing bars are becoming prepared for an increase in price for fourth quarter purchases. Few transactions at higher prices have been noted as yet but low priced tonnage is being cleaned from mill books. Rail steel sales and shipments in the Chicago district made new records in August. Eastern inquiry is active.

REINFORCING BAR PRICES, PAGE 651

Chicago, Sept. 11.—Both billet and rail steel reinforcing bar sellers are viewing the possibility of advancing prices. Several attractive building jobs recently weakened both billet and rail steel quotations. Billet bar sellers point out that the possibility of higher mill prices for fourth quarter suggests the necessity of more stable and even higher quotations. Rail steel bar fabricators cite the higher cost of rail bar material. Rail steel bar sales and shipments in August are reported a record in this district, and shipments in the first eight months of 1928 were the best in five years. Chicago building permits for August decreased 45.62 per cent in value from July but only a slight loss in number.

Boston, Sept. 11.—The new prospective jobs for concrete bars and reinforcing steel remain unclosed. Favorable tonnages resulting from aggregated small orders which constituted the backbone of the market for more than two months dropped sharply the past week, totaling less than 200 tons.

Worcester, Mass., Sept. 11.—Several thousand tons of reinforcing bars will be required altogether for the development of the Fifteen Mile Falls waterpower project of the Grafton Power Co., a subsidiary of the New England Power association. One dam will be 3100 feet long and the second 2300 feet. A five-mile railroad is being constructed from East Barnet, Vt., to handle materials.

New York, Sept. 11.—A large amount of concrete reinforcing bar work is pending in this district, including subways, buildings and road work in New Jersey. Few jobs of size have been awarded in the past week but the flow of small orders is fairly consistent.

Pittsburgh, Sept. 11.—Sellers of concrete bars announce an advance of $2 a ton effective at once, making current quotations 2.00c, base, Pittsburgh, for mill length billet steel bars, and 2.25c, Pittsburgh, for cut lengths. Demand is fairly well maintained. Most of current inquiry is for small lots.

Buffalo, Sept. 11.—Sales and inquiries of reinforcing bars are especially good for this season. New inquiry listed this week totals more than 1000 tons and some fair sized lots were booked for early shipment. Prices have firmed up considerably with the withdrawal of some former low prices on bars delivered from local stocks.

Philadelphia, Sept. 11.—Reinforcing bar business has slowed up considerably, with a 300-ton award for a Wilmington, Del., project predominating. Prices are unchanged with 2.85c applying on local stocks.

Cleveland, Sept. 11.—Inquiries involving concrete bars have shown a decided improvement the past week or 10 days. The latest is the addition to the local plant of the W. S. Tyler Co. This may take more than 150 tons. Reinforcing steel, too, will be needed in the West 117th street grade elimination between Cleveland and Lakewood, O., on which the structural steel was let last week.

Awards Compared

	Tons
Awards this week	3,895
Awards last week	7,130
Awards two weeks ago	5,907
Awards this week in 1927	3,387
Average weekly awards, Aug	5,863
Average weekly awards, 1928	6,981
Total awards to date, 1927	202,211
Total awards to date, 1928	251,330

CONTRACTS PLACED

650 tons, West Hanford street sewer, Seattle, to Pacific Coast Steel Co.
450 tons, miscellaneous work for Union Terminals, Cleveland, to Truscon Steel Co. Lundoff-Bicknell Co., Cleveland, general contractor.
300 tons for boardwalk at Rockaway Beach, N. Y., to Edward T. Edwards, through Montrose Contracting Co.
300 tons rerolled for Rockaway board walk, New York, P. J. Carlin Construction Co., to E. T. Edwards.
300 tons, Y. M. C. A., Wilmington, Del., to Kalman Steel Co.
265 tons, apartment at 1032 North Dearborn street, Chicago, to Calumet Steel Co.
250 tons, Illinois road work, to Calumet Steel Co.
210 tons, West Stanislaus irrigation district, Westley, Calif., to Pacific Coast Steel Co.
200 tons, apartment at 517 Oakdale avenue, Chicago, to Concrete Engineering Co.
200 tons, for floors, Rand building, Buffalo, to Kalman Steel Co.
175 tons, Cushman spillway, Tacoma, Wash., to Northwest Steel Rolling Mills.
150 tons, addition Swift & Co. garage, Chicago,

to Barton Spider Web System Inc.
125 tons, for Union road bridge, Buffalo, to Kalman Steel Co.
120 tons, two culverts for Ohio, to Bourne-Fuller Co.
100 tons, school at Chicago Heights, Ill., to Calumet Steel Co.
100 tons, medical and dental building, Spokane, Wash., to Pacific Coast Steel Co.

CONTRACTS PENDING

600 tons, apartment hotel, 1234 South Wabash avenue, Chicago; Morris L. Bein, architect.
575 tons, three buildings at Fort Lewis, Wash. Bids in Sept. 5.
500 tons, Olympic hotel addition, Seattle; bids soon.
500 tons, addition to City and County building, Seattle. Bids soon.
400 tons, welded mesh, for Naples-Middlesex-Bristol Springs road, Yates county, New York; Schreier Construction Co., Buffalo, low bidder.
395 tons, paving in Sonoma county, Calif.; bids opened.
300 tons, 18 Mile Creek bridge, Buffalo; Peckham Construction Co., Buffalo, low bidder.
260 tons, Mill Creek bridge, Salem, Oreg.; bids opened.
250 to 300 tons for hotel at Twelfth & Locust streets, St. Louis; McKelvey-Carter Construction Co. general contractor.
250 tons, bridge at Belvidere, Ill.; bids Sept. 11.
248 tons, South spillway, East Bay municipal utility district, Oakland, Calif.; bids opened.
150 tons, addition, W. S. Tyler Co., Cleveland. Bids being taken.
125 tons, Nurses' home, Chicago.
100 tons, Warsaw-Gainesville road, New York; Joseph A. Burke, Lockport, N. Y., low bidder.
100 tons, Pardee reservoir, East Bay municipal utility district, Oakland, Calif.; bids received.
Unstated tonnage, West 117th street grade elimination, New York Central railroad, Cleveland.

Iron Ore

Shipments Increased by an Additional 200,000 Tons

IRON ORE PRICES, PAGE 652

Cleveland, Sept. 11.—While increasing activity in the pig iron market has not been reflected in additional demands for iron ore for merchant furnaces, steelworks are taking more ore than was anticipated a month ago. Shipping instructions for iron have been increased 200,000 tons in the past week, following an increase of 520,000 tons as reported last week. The Lake Superior Iron Ore association reports the following receipts and shipments from Lake Erie ports for the season to Sept. 1:

Port	Receipts	Shipments	Dock balance Sept. 1, '28
Buffalo	2,516,814	7,660	2,622
Erie	322,422	331,592	61,621
Conneaut	5,154,241	4,943,439	1,723,034
Ashtabula	3,537,642	3,550,183	1,939,724
Fairport	1,144,942	1,138,287	340,278
Cleveland	5,212,482	3,456,617	1,092,806
Lorain	2,068,108	986,134	116,155
Huron	681,259	696,107	384,306
Toledo	877,070	485,673	57,936
Total	21,514,980	15,595,692	5,718,482
Comparative total 1 yr. previous	24,299,794	18,064,091	6,074,966

Following are receipts for the season at other than Lake Erie ports:

	Receipts
Detroit	562,222
Indiana Harbor	1,384,751
Gary	2,739,737
South Chicago	4,180,831
Milwaukee	.....
Boyne City	.....
East Jordan	9,699
Saulte Ste. Marie, Ont.	417,317
Point Edward, Ont.	315,828
Total	9,610,385
Comparative total 1 year previous	9,472,451

Rails, Cars

Great Northern Has $3,000,000 Program Ahead; Lets 500 Cars —Light Rail Orders Few

FALL and winter program for the Great Northern railroad comprises construction and rebuilding valued at approximately $3,000,000 for its own shops. It last week awarded 500 flat cars and will build 500 box cars and 2000 underframes at its Superior, Wis., shops. New rail inquiry out in Chicago totals 6500 tons. Light rail demand falls.

RAILROAD TRACK PRICES, PAGE 652

New York, Sept. 11.—Fresh car inquiry in this district is slack, with awards light. Full returns indicate that 677 freight cars were placed by domestic lines in August, compared with 582 in July, the lightest total so far this year. The total for the first eight months is 29,593, compared with 45,641 in the corresponding period of last year. Further comparisons follow:

	1928	1927	1926	1925
Jan.	4,160	14,710	8,830	1,695
Feb.	10,220	5,960	12,895	5,510
March	2,958	4,955	8,895	4,730
April	6,043	3,675	4,615	5,060
May	2,531	5,425	4,448	6,985
June	2,422	7,440	4,285	1,835
July	582	2,295	1,265	800
Aug.	677	1,181	152	2,875
Total (8 mos.)	29,593	45,641	46,385	27,490
Sept.	.....	682	3,335	7,905
Oct.	.....	886	2,840	11,145
Nov.	.....	1,189	3,925	11,685
Dec.	.....	14,897	8,990	16,885
Total	.....	64,042	60,575	77,110

Locomotive inquiry is featured by 55 for Canadian National.

Pittsburgh, Sept. 11.—A fair volume of business is being received by makers of track accessories, but light rail demand has slackened. Most business is routine. Mills generally quote 2.80c, Pittsburgh, for railroad spikes, $43 for tie plates, and $36 for light rails.

Chicago, Sept. 11.—Producers of standard steel rails in this territory are encouraged by the outlook. One new inquiry for 1929 shipment totals 6500 tons. Mills have scheduled for prompt rolling about 16,000 tons of rails in the past several days, in addition to previous tonnage, which brings the total to about 22,000 tons to be produced in about 30 days. The Chesapeake & Ohio order of 45,500 tons of rails has not been placed, and the track fastenings to go with this order also are outstanding. Rail mill operations are continuing at about 50 per cent, but schedules have been lengthened.

Specifications for track fastenings are active. Sales and specifications on previous orders amounted to 4500 tons during the week. About 3000 tons are on the market to go with rails that have been placed.

Great Northern railroad, which has been inquiring for 1000 freight cars, has awarded 500 flat cars to Standard Steel Car Co., and will build 500 box cars in the company's own shops at Superior, Wis. This road also will build 2000 underframes.

Great Northern railroad has outlined a $3,000,000 fall and winter construction and rebuilding program. Work includes rebuilding and equipping with underframes of 2500 box cars and construction of 500 auto cars and 25 cabooses.

Birmingham, Ala., Sept. 11.—The rail mill of the Ensley works of the Tennessee Coal, Iron & Railroad Co. resumed Sept. 9 after a few weeks' idleness. If rail business in prospect materializes, the mills will be operating indefinitely.

Toronto, Ont., Sept. 11.—Algoma Steel Corp., Sault Ste. Marie, Ont., has received an additional order for 16,000 tons of rails from the Canadian Pacific railroad. This will keep the rail mill operating six weeks.

CAR ORDERS PLACED

Great Northern, 500 flat cars to Standard Steel Car Co. and 500 box cars to its own Superior, Wis., shops; also 2000 steel underframes, to its own shops.

LOCOMOTIVES PLACED

Bangor & Aroostook, one switch engine, to American Locomotive Co.
Central Lafayette of Porto Rico, one locomotive, to Baldwin Locomotive Works.

CAR ORDERS PENDING

Illinois Traction system, 100 box cars; pending. This in addition to 100 to 200 composite gondolas, recently noted.
Pacific Northwest, five motor cars and five trailers.

LOCOMOTIVES PENDING

Canadian National, 55 locomotives.

Eastern Rate Rises Are Made Effective

Washington, Sept. 11.—The proposed increased rate on iron and steel articles in less than carloads from Pittsburgh and certain other points in Pennsylvania east thereof, to Norfolk, Va., and points in Virginia and Maryland on the Delaware - Maryland - Virginia peninsula grouped therewith, have been found justified by the interstate commerce commission in a decision rendered in its recent investigation. The order of suspension has been vacated and the proceeding discontinued.

The Market Section

Strip

Fourth Quarter Booking Is at Firm Prices—Specifications Continue at Active Rate

STEADY buying at firm prices marks hot and cold rolled strip steel. Fourth quarter tonnages are being booked at advanced prices, with some favored consumers covering for the year at third quarter quotations. Automobile builders and parts makers give the market much strength at Chicago. A new card on hot rolled strip is expected about Oct. 1.

STRIP PRICES, PAGE 652

Pittsburgh, Sept. 11.—Makers are booking fourth quarter business in hot strip steel at 2.20c, Pittsburgh, for sizes under 3 inches, 2.00c for 3 to 6-inch material, and 1.90c for 6 to 12-inch, although it is understood that some users have been able to book their requirements for the remainder of the year at third quarter prices. Contracts for cold rolled strip are being taken at 2.75c and 2.85c, Pittsburgh, prices. Makers are quoting 3.10c on spot business of 1 to 3 tons.

Worcester, Mass., Sept. 11.—The cold-rolled strip market is featured by demand from diversified industries, especially for narrow widths. Prices waver in spots and recent advances have had little test and probably will not until next quarter. Buyers have increased specifications against third quarter contracts and for volume business are paying 3.00c, Worcester. Smaller orders are moving at 3.10c to 3.15c, although it is reported with some apparent justification that business is coming into New England below these prices when figured at base.

New York, Sept. 11.—While some makers are quoting 2.85c, Pittsburgh, on cold rolled strip steel, plus extras for smaller quantities, 2.75c, is still available. On hot rolled strip 2.30c, Pittsburgh, is quoted for less than 3 inches wide, 2.00c to 2.10c for three to six inches and 1.90c to 2.00c for six to 12 inches. Some sellers regard these prices as more or less temporary, pending issuance of a new card about Oct. 1.

Philadelphia, Sept. 11.—On the general run of strip steel orders prices range from 1.90c to 2.20c, base, Pittsburgh, depending on width, although 1.80c still is noted on certain special widths. Current demand is active. Cold rolled strip is going to the larger consumers at 2.75c, base, Pittsburgh.

Cleveland, Sept. 11.—Miscellaneous consumption is represented in recent hot and cold strip orders, different lines registering improvement. Main support to mill backlogs, however, still comes from the automotive industry. Cold strip tonnage has been heavy in closing out old low priced arrangements and the new 2.85c level for fourth quarter has not been definitely established. While an effort is being made to obtain 1.90c for 6 to 12-inch hot strips in the fourth quarter, some makers will accept tonnage at the same figure as applied in the third quarter.

Chicago, Sept. 11.—Due to steady buying by automobile builders and parts makers, sales of hot rolled strip steel are at the level of the past several months. Operations continue at 80 to 85 per cent. Quotations are 2.30c, Chicago, for strips and bands under 3 inches; 2.20c for 3 to 6-inch material; 2.00c for 6 to 12-inch strips, and 2.10c, blue annealed sheet basis, for material 12 to 24 inches in width. Makers of cold rolled strips also report steady business, with quotations at 2.75c to 2.85c, Pittsburgh-Cleveland, in lots of three tons and over.

Cold Finished Steel

Fourth Quarter Books Opened with Specification Restrictions

COLD FINISHED PRICES, PAGE 651

Pittsburgh, Sept. 11.—Cold finished steel producers have opened their books for fourth quarter at 2.20c, Pittsburgh and Chicago, and 2.25c Cleveland. Contracts also carry the stipulation that fourth quarter specifications must be received bv Dec. 10. days in which specifying may be done during fourth quarter, it is in line with the procedure followed by soft steel bar producers. Cold finished shafting is 2.55c to 3.00c, Pittsburgh, depending upon size. Current activity generally is restricted to contract business, spot buying being light. Specifications are well maintained.

Wire

Better Volume of Buying Appears and Prices Are Holding Up Well

AUTUMN is bringing better demand for wire and nails in several markets. Prices show no weakness and are holding the level of past weeks. Chicago mills are increasing production of manufacturers' wire. Fourth quarter contracts are becoming more numerous. Jobbers supplying farm areas are accumulating larger stocks for fall trade.

WIRE PRICES, PAGE 652

Chicago, Sept. 11.—Western wire mills report accumulation of heavier tonnage and prices holding better. Operations are being increased in some lines, notably manufacturers' wire, but in some other lines operations are not up to 70 per cent. Production is not heavy in wire nails but a pick-up in demand is expected. Quotations are steady at $2.60 for wire nails and 2.45c, Chicago, or western mills, for bright plain wire.

Worcester, Mass., Sept. 11.—Demand for steel wire and wire specialties has increased slightly in practically all departments. Third quarter specifications have increased and while fourth quarter contracts have been limited consumers of wire are showing more interest. Prices are steady at 2.55c for plain wire, Worcester base.

New York, Sept. 11.—Fourth quarter contracts for nails are becoming more numerous, with prices holding unchanged at $2.55, Pittsburgh, to jobbers, and $2.65 to dealers. Wire is holding at $2.40 and $2.50, Pittsburgh, the latter to dealers. Specifications are only fair, although better than sometimes at this season. Rods are holding at $42, Pittsburgh.

Philadelphia, Sept. 11.—Nail and wire demand is moderate and prices are firm at $2.55 and 2.40c, Pittsburgh.

Pittsburgh, Sept. 11.—Contracts are being taken for fourth quarter wire at 2.40c, Pittsburgh, for plain wire and $2.55 for wire nails. The market is firm at these figures. Specifications continue in satisfactory volume, although nails are comparatively quiet. Manufacturers' wire, however, is active and jobbers supplying the agricultural districts are stocking.

Buffalo, Sept. 11.—This season's sales of wire cloth and poultry netting have been the best for several years. Business was generally taken at full prices and jobbers will not have heavy carry-over stocks. Demand for non-seasonal wire lines has been good for the past two weeks and operations of local mills show little decline from the peak.

Cleveland, Sept. 11.—Orders are far from numerous for wire or wire nails. A fair number are coming from jobbers who desire to fill out their stocks for the usual increase in fall demand.

Nonferrous Metals

Large Buying Supported by Excellent Consumption—Demand Chiefly for Early Shipment—Prices Firm Except on Tin

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Straits Tin New York Spot	Straits Tin New York Futures	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
Sept. 5	14.75	14.82½	14.37½	47.37½	46.30	6.40	6.25	6.25	23.90	10.25	35.00
Sept. 6	14.75	14.82½	14.37½	47.50	46.62½	6.40	6.25	6.25	23.90	10.25	35.00
Sept. 7	14.75	14.82½	14.37½	47.00	46.12½	6.40	6.25	6.25	23.90	10.37½	35.00
Sept. 10	14.75	14.82½	14.37½	47.00	46.12½	6.40	6.25	6.25	23.90	10.50	35.00
Sept. 11	14.75	14.82½	14.37½	47.00	46.25	6.40	6.25	6.25	23.90	10.75	35.00

NEW YORK, Sept. 11.—Another week of good business is recorded in the nonferrous metal markets. Buying gives every evidence of being backed by excellent consumption. Nearly all buying is for early shipment. Prices on all metals except tin, have been strong with no actual change. Higher prices on lead and copper are being discussed but in the latter metal powerful sentiment for keeping the price where it is, exists.

Brass and copper product sales lately have been large, mostly for quick shipment. Automobile, radio, building and electrical industries accounted for most of the large business done last month. Demand from the building industry for copper products is reported by some mills to have been larger lately than last spring. Prices remain unchanged.

Copper—Domestic buying for October was large the past week and some producers are out of the market for this position. Some demand is met for November delivery. Users are well covered for October. Little September copper is available. The situation is so strong that a rise in price would not be surprising. Export business has been large the past week, for September and October, with the price unchanged at 15.00c c.i.f. European ports.

Lead—Buying has continued active with business well divided between September and October. The market has been placed in a strong position by continued buying. Export business has been good. Prices are unchanged but the trade would not be surprised to see higher prices than 6.40c, New York, and 6.25c, East St. Louis, now quoted.

Tin—Buying by consumers fell off for several days and prices slumped, especially on spot. Futures have shown a little more firmness. The price tendency has been in the face of better statistics last month than had been expected. The visible supply went up only 434 tons whereas a big increase had been expected earlier. On the other hand the total visible now is 4000 tons larger than a year ago, and there is some fear of further accumulation before the end of the year.

Aluminum—Buying is active and consumption is large, but prices are unchanged.

Zinc—Prime western is moderately active, mostly on small lots sold from day to day. The price remains unchanged at 6.25c, which has ruled since early in August. At the end of August stocks showed an increase of 2206 tons compared with July, the increase being due to the fact that output exceeded shipments. Production during the month gained while shipments declined.—*Daily Metal Trade.*

Is Fabricating Hoops

Youngstown, O., Sept. 11.—The Carnegie Steel Co. has established at its McDonald works here a plain department for fabricating the steel hoop material which is rolled in these mills. Heretofore the company has merely rolled the hoop material which has been fabricated elsewhere. Now, however, in the new shop which started operating last week, hoops of all sizes are being fabricated and shipped directly to consumers.

Mill Products

Base prices cents per pound f.o.b. mill

SHEETS	
Yellow brass (high)	19.25
Copper, hot rolled	23.50
Lead, full sheets (cut ¼c more)	10.00
Zinc sheet (100-pound base)	9.75
Zinc strip (100 pound base)	9.00
Aluminum, flat sheets, up to 10 gage, 3" to 72" wide	31.30
SEAMLESS TUBES	
Yellow brass (high)	24.12½
Copper	25.00
RODS	
Yellow brass (high, full turning)	17.00
Naval brass	19.75
WIRE	
Copper, car lots	16.37½
Yellow brass (high)	19.75

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	9.50 to 9.75
Chicago	9.25 to 9.50
Cleveland	10.00 to 10.25
HEAVY YELLOW BRASS	
Chicago	7.00 to 7.25
Cleveland	7.25 to 7.50
ZINC	
New York	3.50
Cleveland	3.25
HEAVY COPPER AND WIRE	
New York	12.25
Boston	11.50 to 12.00
Chicago	11.50 to 12.00
Cleveland	12.00 to 12.25
RED BRASS BORINGS	
New York	8.50 to 9.00
YELLOW BRASS TUBING	
Cleveland	7.50 to 8.00
LIGHT COPPER	
New York	10.75
Chicago	10.25 to 10.50
Cleveland	10.75
LIGHT BRASS	
Boston	5.75 to 6.00
Chicago	6.25 to 6.75
Cleveland	5.50 to 6.00
ALUMINUM	
Clippings, Cleveland	17.50 to 18.00
Borings, Cleveland	8.50 to 9.00
Cast, Cleveland	12.50
Cast, Boston	10.50 to 11.00

Secondary Metals

Remelt Aluminum No. 12	15.00 to 15.50
Brass ingot, 85-5-5	12.50 to 13.00

Coke By-Products

Benzol and Toluol Continue Strong —Naphtha Is Slow

New York, Sept. 11.—Light oil distillates are featured by continued strength in benzols and toluol. Sellers are booked up for September on toluol and one or two are sold ahead on pure and 90 per cent benzol. While solvent naphtha and commercial xylol are in somewhat better demand, these products still are moving slowly, with prices weak but unchanged.

Sulphate of ammonia is moving briskly against long-time contracts, although there is little in the way of new buying, either for domestic or foreign account. Meanwhile, the contract market is $2.20, delivered, for material for domestic account and $2.35, port, for material in double bags at port for export shipment. Ball and flake naphthalene are quiet and unchanged.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contracts
Pure benzol	$0.22	
90 per cent benzol	0.22	
Toluol	0.35	
Solvent naphtha	0.30	
Commercial xylol	0.30	
Per Pound at Producer's Plants in 250-Pound Drums		
Phenol	0.17	
Per Pound at Producers' Plants		
Naphthalene flakes	0.06 to 0.07	
Naphthalene balls	0.06 to 0.07	
Per 100 Pounds Delivered		
Sulphate of ammonia	$2.20	

Mercury Up To $135

New York, Sept. 11.—Quicksilver is advancing with a rush on account of the organization of Spanish and Italian producers. The price now is $135 a flask, against $128 to $130 a week ago.

Warehouse

Autumn Demands Upon Jobbers Expand Weekly—Prices Firm Except in Texas—Stocks Expanded to Meet Orders

MISCELLANEOUS demands upon warehouses have expanded greatly since the first of the month. This is especially true of sheets for both exterior and interior building work. As mill deliveries become more deferred, jobbers receive more orders.

New York, Sept. 11.—Trading in the metropolitan warehouse market is moderately active, although not as brisk as anticipated by some jobbers earlier in the month. A falling off in demand for shapes and bars appears chiefly responsible.

Buffalo, Sept. 11.—Warehouse sales, retarded somewhat by Labor day, have since shown a good pickup. Volume compares favorably with midsummer and corresponding period of 1928.

Baltimore, Sept. 11.—Notwithstanding an advance of $2 a ton at some leading warehouse centers, jobbers here continue to quote cold-rolled steel unchanged at 3.35c for rounds and hexagons and 3.85c for flats and squares.

Pittsburgh, Sept. 11.—Sales of iron and steel products from warehouses are well maintained and better demand is noted by some sellers. Prices are steady with no change yet by jobbers on cold finished steel. Rounds and hexagons still are quoted at 3.60c and flats and squares at 4.10c. Several jobbers report brisk demand for sheets from a diversified list of consumers.

Cleveland, Sept. 11.—Sheet business from warehouses was less extensive in August this year than last. Other forms of steel, however, moved out in greater volume. An unusual number of small sheet orders from metal-working shops have developed since Sept. 1, however, so that September will make up for August's lack. Demand for cold finished bars continues to expand and as mill deliveries tighten slightly on bars, plates, shapes, etc., more calls are made upon the jobbers.

Chicago, Sept. 11.—Warehouse volume of business for August was practically equivalent to July but 10 to 15 per cent ahead of a year ago. Lengthening of mill deliveries, is bringing more active business to jobbers. Sheet jobbing is more active. Heavy sales of soft steel and cold rolled bars are reported.

Philadelphia, Sept. 11.—A leading jobber here has applied to shapes and plates the quantity differentials applied in recent months to bars and other hot-rolled materials. It has established a base on these two products of 2.60c. It is believed other

(*Concluded on Page* 667)

Warehouse Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Baltimore	3.10c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.00c
Ft. Worth	3.50c
Houston	3.00c
Los Angeles	3.30c
New York†††‡‡	3.25c
Philadelphia*	2.70c
Pittsburgh	2.90c
Portland	2.50c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	3.75c to 4.04c

IRON BARS

Baltimore	3.10c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.00c
Ft. Worth	3.50c
New York†‡	2.80c to 3.24c
Philadelphia*	2.70c
St. Louis	3.15c
Tulsa	3.75c to 4.04c

REINFORCING BARS

Baltimore	3.31c
Boston	3.265c to 3.50c
Buffalo	2.75c
Cincinnati	3.15c
Cleveland	2.25c to 3.00c
Detroit	3.00c
Ft. Worth	3.50c
Houston	3.00c
Los Angeles cl.	2.65c
Los Angeles lcl.	3.00c
New York	2.95c to 3.10c
Philadelphia	2.85c
Pittsburgh	2.75c to 3.175c
San Francisco cl.	2.00c
San Francisco lcl.	2.25c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.75c to 4.00c
Youngstown	2.30c to 2.60c

STRUCTURAL SHAPES

Baltimore	3.10c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.10c
Ft. Worth	4.00c
Houston	3.25c
Los Angeles	3.30c
New York†††‡	3.25c to 3.30c
Philadelphia	2.40c to 3.00c
Pittsburgh	3.00c
Portland	2.90c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.14c

PLATES

Baltimore	3.10c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-in. and thicker	3.00c
Cleve., 3/16-in.	3.20c
Detroit	3.10c
Detroit, 3/16-in.	3.30c
Ft. Worth	4.00c
Houston	3.00c
Los Angeles	3.30c
New York†‡	3.30c
New York†‡ (floor)	5.05c to 5.10c
Philadelphia	2.40c to 3.00c
Phila., 3/16-in.	2.60c to 3.20c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.14c

No. 10 BLUE ANNEALED

Baltimore	3.45c
Boston, 3/16-in.	3.915c
Buffalo	3.70c
Chicago	3.35c
Cincinnati	3.45c
Cleveland	3.25c
Detroit	3.35c
Ft. Worth	4.50c
Houston	3.90c
Los Angeles	4.00c
New York†‡	3.90c
Portland	3.75c
Philadelphia*†	3.15c
Pittsburgh**	3.00c to 3.10c
San Francisco	3.90c
Seattle	4.00c
St. Louis	3.45c
St. Paul	3.75c
Tulsa	4.20c to 4.54c

No. 24 BLACK SHEETS

Baltimore	3.10c to 4.00c
Boston	5.00c
Buffalo	4.20c
Chicago	3.80c
Cincinnati	3.90c
Cleveland	3.40c
Detroit	3.95c
Ft. Worth	4.70c
Los Angeles	4.90c
New York†††	3.70c to 3.80c
Philadelphia*†	3.85c
Pittsburgh‡	3.50c to 3.55c
Portland	4.90c
San Francisco	4.95c
Seattle	5.00c
St. Louis	4.10c
St. Paul	3.95c
Tulsa	4.34c

No. 24 GALVANIZED SHEETS

Baltimore	4.10c to 4.75c
Boston	5.85c
Buffalo	4.70c to 5.05c
Chicago	4.65c
Cincinnati	4.75c
Cleveland	4.25c
Detroit	4.75c
Ft. Worth	5.50c
Houston	5.30c
Los Angeles	5.30c
New York†††	4.25c to 4.50c
Philadelphia*†	4.60c
Pittsburgh‡	4.40c
Portland	5.50c
San Francisco	5.40c
Seattle	5.50c
St. Louis	4.95c
St. Paul	4.90c
Tulsa	6.50c

BANDS

Baltimore	3.85c
Boston	4.015c to 5.00c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.65c
Ft. Worth	4.25c
Houston	3.65c
Los Angeles	4.15c
New York†‡	4.00c
Philadelphia*	3.25c
Pittsburgh	3.60c
Portland	3.75c
San Francisco	4.10c
Seattle	4.00c
St. Paul	3.90c
Tulsa	4.50c to 4.66c

HOOPS

Baltimore	4.00c
Boston	5.50c to 6.00c
Buffalo	4.05c
Chicago	4.15c
Cincinnati	4.25c
Cleveland	3.65c
Detroit	4.15c
New York†‡	4.50c
Philadelphia*	3.50c
Pittsburgh	4.50c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds, hexagons,	Flats, squares
Baltimore	3.35c	3.85c
Boston	3.45c	3.95c
Buffalo	3.95c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.65c	4.15c
Detroit	3.85c	4.35c
Los Angeles (a)	4.50c	.....
New York	3.50c	3.90c
Philadelphia*	3.35c	3.85c
Pittsburgh	3.60c	4.10c
Portland (a)	4.75c	.....
San Fran. (a)	4.25c	.....
Seattle (a)	5.00c	.....
St. Paul (a))	3.85c	.....
Tulsa	4.76c	5.26c

(a) Rounds only.

COLD ROLLED STRIP

Boston, 0.100-inch, 500 pound lots	5.30c
Buffalo	5.85c
Chicago (b)	6.10c
Cincinnati	7.15c
Cleveland (b)	5.95c
Detroit	5.80c
New York	5.15c
Philadelphia (c)	5.00c

(b) Net base, straightening, cutting, boxing 1 ton or more. (c) Plus mill, size and quantity extras.

SWEDISH IRON AND STEEL

New York duty paid

Hollow drill steel	14.00c
Iron bars, rounds	6.25c
Flats and Squares	
Baltimore, New York, Phila.	6.60c

*Plus quantity differentials. ‡‡Minus quantity differentials. ††Domestic bars. ‡10 to 24 bundles. **25 or more sheets. *†50 or more bundles. †††Newark-Jersey City 4.00c on black and 4.70c on galvanized the more prevalent figures.

Pacific Coast

Largest Bookings in a Month Being Taken—Much New Work is in Prospect

MODERATELY active conditions prevail in iron and steel on the Pacific coast. At San Francisco bookings are markedly heavier and at Seattle a steady trade continues. Much prospective work is in sight all along the coast. Prices are holding steadily on practically all lines. Activity in oil demand in Southern California continues a factor.

San Francisco, Sept. 8.—(*By Air Mail*)—Bookings of structural steel shapes, reinforcing bars, plates and cast iron pipe during the past week were the heaviest in over a month and some fair sized lots are pending. Plate fabricators are keenly interested in the inquiry of the Shell Oil Co. for five 80,000-barrel oil storage tanks. This is the first large inquiry for tanks on the coast so far this year. Prices on some lines of products are firm while on others they are low. Especially is this true as regards out-of-stock prices on reinforcing bars and steel plates.

Pig Iron and Coke

Sales and inquiries in pig iron and coke are being limited to unimportant lots. No changes in prices are noted.

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah foundry	25.00 to 26.00
*German	24.25
*Indian	24.00 to 25.00

*C.i.f. duty paid.

Bars, Plates and Shapes

Bookings of concrete bars this week totaled close to 2000 tons and brought the aggregate for the year to 64,202 tons, compared with 39,953 tons for the corresponding period in 1927. The Pacific Coast Steel Co. booked 210 tons for the West Stanislaus irrigation district at Westley, Calif., and 650 tons for a sewer project at Seattle. The Northwest Steel Rolling Mills secured 175 tons for the Cushman spillway at Tacoma and 250 tons for a warehouse addition in Seattle. Pending business calls for more than 8000 tons, new inquiries including 1800 tons for the Life Science building at the University of California, Berkeley, and 500 tons each for an addition to the City and County building, Seattle, and the Olympic hotel of the same city. Out-of-stock prices on reinforcing steel bars in both the Los Angeles and San Francisco district are low and most business is going at 1.80c.

The leading development in the plate market this week was the inquiry put forth by the Shell Oil Co., San Francisco, for five 80,000-barrel tanks involving 1500 tons of plates and shapes. These tanks are for the Martinez, Calif., plant. Awards this week aggregated 560 tons and brought the total for the year to 20,201 tons, compared with 50,144 tons for the same period a year ago. The Birchfield Boiler Co. booked 330 tons for a 32-inch welded pipe line for Tacoma and the Western Pipe & Steel Co. took 105 tons for a 36-inch riveted pipe line for the Belle Fourche project in South Dakota for the bureau of reclamation. No action has been taken on the 7200-ton pipe line for the East Bay municipal utility district at Oakland. Prices range from 2.20c to 2.30c, the latter figure applying only on small lots.

McClintic-Marshall Co. took 600 tons for the exposition building at Pomona, Calif., 535 tons for a hotel in San Francisco and 432 tons for a bridge for the Pacific Electric railway in Los Angeles. The Pacific Car & Foundry Co. was awarded the Marblemount bridge in Washington, involving 415 tons. Pending business exceeds 12,000 tons and new inquiries call for 500 tons for an addition to the Olympic hotel, Seattle, and 230 tons for a bridge at Olympia, Wash. Plain material continues firm at 2.35c, c.i.f.

Other Finished Material

One of the largest cast iron pipe awards placed in the San Francisco district this year went to an unnamed eastern interest and called for 1062 tons for the Spring Valley Water Co., San Francisco. The American Cast Iron Pipe Co. took 320 tons for Santa Ana, Calif.

Fair Trade at Seattle

Seattle, Sept. 5.—Demand for steel in the Pacific Northwest is fair. Not much tonnage is pending but considerable new work is to be announced soon. Mill representatives state that business is slow. Local steel mills are on the same basis of operations. New business consists mostly of small tonnages but orders continue steady. Wholesale jobbers report a satisfactory volume with prospects for increased trade during the fall.

Bars, Plates and Shapes

Mill prices of bars, plates and shapes are holding steady, bars and shapes at 2.35c and plates at 2.25c. Reinforcing material is on a basis of 2.20c.

Awards of reinforcing material this week consisted of carload lots, except 100 tons for the Spokane Medical and Dental building, awarded to Pacific Coast Steel Co. Two small bridge jobs in this state and Oregon were placed with the Northwest Steel Rolling Mills, totaling about 60 tons. An order for 160 tons for the Deschutes bridge, Maupin, Oreg., went to an unnamed firm. Bids were to be opened today for three buildings at Fort Lewis, Wash., involving 575 tons.

Wholesalers report a fair volume of light gage plates moving in carload lots but no large tonnages are pending. Steel Tank & Pipe Co., Portland, obtained the award for 54-inch riveted steel pipe for a watermain extension at Tacoma. This job involves 175 tons.

Vanadium-Alloys Steel May Absorb Colonial

Pittsburgh, Sept. 11.—Absorption of the Colonial Steel Co., Pittsburgh, will be voted on Oct. 30 by stockholders of the Vanadium-Alloys Steel Co., Latrobe, Pa. Roy C. McKenna, president of the former company, says if the merger is approved stock of the Vanadium company will be increased from 120,000 to 210,000 shares, no par value. He stated that the 90,000 additional shares will be more than sufficient to cover the purchase of the Colonial company. It is planned to list the stock on the Pittsburgh stock exchange.

Both companies manufacture high-grade tool steel. The Colonial company makes crucible, electric and high grade open-hearth steel, and has a patented process for coating steel plate and wire with copper. The book value of both plants aggregates more than $8,000,000.

Mr. McKenna stated that the business would be conducted separately, except that the sales would be coordinated. No change in management is contemplated at present. He, however, would become president of the Colonial company if the merger is made and Georges P. Rhodes, president of the Colonial Steel Co., T. Howe Childs and S. Clarke Reed would represent the Colonial stockholders on the Vanadium-Alloys board.

Will Hear Rail Argument

Washington, Sept. 11.—The interstate commerce commission has announced Sept. 27 as the date for oral argument on the proposal of the Montour railroad, owned by the Pittsburgh Coal Co., to acquire control of the Pittsburgh, Lisbon & Western railroad and to make extensions that would give Youngstown, O., an outlet to the Ohio river at Smith's Ferry, Pa.

G. O. With Appointed

Chicago, Sept. 11.—George O. With, formerly sales manager for Consolidated Expanded Metal Companies, has been appointed district sales manager for Concrete Steel Co. with headquarters in this city. Mr. With succeeds William Piez, whose resignation was announced in IRON TRADE REVIEW, Aug. 9.

Pig Iron Market Active

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into the market. Others failed to cover and now find supplies short. Merchant stocks have been reduced to the lowest point in many months. Little St. Louis district iron is coming into the territory just west of Chicago. Sales of silvery iron during the week totaled more than 700 tons, sellers obtaining the full schedule. The base price of $18, Chicago furnace, is holding steadily for No. 2 foundry and malleable.

Inquiries for foundry and malleable iron are developing from several large melters, now interested in tonnage for the remainder of the year, with an improved outlook in their business. Spot orders for pig iron in August were near a record for any month. All merchant stacks in this district now are in blast.

Contract has been placed by the Illinois Steel Co. for rebuilding No. 11 stack of the Gary, Ind., blast furnace group. The contract, which represents an expenditure of $1,000,000, went to the W. B. Pollock Co., Youngstown, O.

Cincinnati, Sept. 11.—The Rockwood furnace has announced an advance in the price of foundry iron from $16 to $16.25 thus joining other southern furnaces at the Birmingham base. One southern furnace representative here sold a total of 400 tons in the past week. An inquiry from the Lunkenheimer Co. in this city for 550 tons of northern iron has not been closed.

St. Louis, Sept. 11.—Sales and shipments of pig iron have increased, and the market is firm. Sales reported in the past week totaled approximately 22,000 tons, of which more than 19,500 tons was booked by the St. Louis Gas & Coke Corp. The largest sale was 15,000 tons of basic for an east side steelmaker. Two Illinois implement manufacturers took 1000 tons of foundry iron each, and 800 tons was purchased by a radiator maker.

Birmingham, Ala., Sept. 11.—Activity still is noted in pig iron buying, though small lots predominate. Furnace interests are meeting all requests for steady delivery, and surplus stock is being reduced slowly. The price is firm at $16.25, base, Birmingham, with indications of another advance. Gulf States Steel Co. will start up its rebuilt furnace next week on foundry iron, entering the open market.

Toronto, Ont., Sept. 11.—Fourth quarter contract placing is strongly featured in the Canadian pig iron market. Expectations of higher prices brought a number of melters into the market to cover to the end of the year, and several orders were closed for 1500 to 2000 tons. Inquiries are steadily increasing. About 50 per cent of the melters have covered. Spot sales have also improved. General business in the iron and steel industry of Canada is showing steady improvement, with the daily melt of foundries and other merchant iron consumers ranging from 75 to 100 per cent. Local blast furnace representatives intimate advances of 50 cents to $1 will go in effect soon.

Philadelphia, Sept. 11.—Continued strength in foundry iron is manifested by more general adherence to $20 as the eastern Pennsylvania price, although $19.50 has not disappeared. Fully 10,000 tons of foundry iron was sold in the past week, including at least 2000 tons of pipe iron, with some estimates nearer 5000 tons. Demand for basic iron is quiet, but with enough to establish the market at $19 to $19.25, delivered. Sales of low phosphorus iron include 2000 tons of miscellaneous business booked by one seller at $23 to $23.50, furnace. The Brooks furnace at Birdsboro, Pa., is slated to be blown in the last week of September.

Inland Headed for Record

Earnings of the Inland Steel Co., Chicago this year should be the highest for any post-war year, in the opinion of an official of the company. This would mean a net profit in excess of $7,147,704, the figure which was reported for 1926, heretofore the best showing for any year since the war period.

Warehouse Orders Grow

(*Concluded from Page* 665)

leading jobbers will follow as the differential system appears to have met with general satisfaction. Demand this month has been light although some improvements is noted.

St. Louis, Sept. 11.—Buying of iron and steel out of warehouses has improved somewhat since Labor day. Collections are satisfactory. Prices, steadier than in a long while, may advance for the fourth quarter.

Big Impetus to Car Buying Is Seen in Wooden Equipment Ban

NEW YORK, Sept. 11.—Ultimate replacement of fully 300,000 freight cars as a result of the stand of the arbitration committee of the American Railway association against interchange of cars with wooden underframes after 1930 is believed assured. Whether the committee's action, adopted at the mechanical session of the association's convention at Atlantic City last summer, must be approved by directors of the association is not quite clear.

The proposal was that "effective Jan. 1, 1931, no cars of all-wood construction (now defined as Class F under Rule 112) will be accepted from owners." Under such restrictions it is not believed wooden equipment will be maintained.

According to the interstate commerce commission's last report, as of Dec. 31, 1926, there were, out of a total of 2,348,643 freight cars, 487,864 all-wood cars owned by and available for operation on Class I railroads, which represent 95 per cent of the railroad mileage. This report, incidentally showed that there were 784,191 steel cars and 1,076,606 steel underframe cars. In addition to the above 2,348,643 freight cars, there were 250,000 privately owned freight cars, of which, car builders believe it fair to assume, there were a similar proportion of all-wood cars—approximately 20 per cent, making for a combined total of around 540,000 all-wood cars.

Since that time, more than a year and a half ago, a number of cars have been retired—91,000 in 1927—and it is logical to assume that a substantial proportion have been all-wood cars, particularly in view of the tendency in recent years toward the greater use of the all-steel underframe. Consequently, the above total of 540,000 may be reduced by 50,000, or possibly even more, for as well known replacements have not been large.

Further, a certain allowance should be made for all-wood cars that will be rebuilt, rather than completely replaced, to meet the proposed requirements. However, as many of such cars as would be involved are of obsolete types, the tendency likely will be far more toward replacement than rebuilding, it is said.

From the angle of capacity still another reduction may suggest itself. According to the interstate commerce commission's report of a year and a half ago, average freight car capacity at that time was 45.1 tons, whereas the average capacity of new cars is perhaps 10 tons greater. It would seem, therefore, that a fewer number for that reason would be required to fill the gap in carrying capacity. Still, many believe, in view of the ever-increasing requirements of the future, that most cars will be replaced almost car for car; and that in any event the estimate of 300,000 freight cars to be replaced is a conservative one.

The important question is how fast these replacements will be made. The present surplus of freight cars—241,258 as of Aug. 15—as one factor alone appears to preclude definitely all these replacements being made within two years; nevertheless, the new rule, it is believed, should lead to the placing in that time of a number that would swell the general total substantially in excess of the average 85,000 or so freight cars placed annually over the past ten years, and provide an important buying impetus during the two or three years or so to follow 1931.

New York Water Tunnel To Use Much Steel

New York, Sept. 11.—More than 21,000 tons of iron and steel products will be required for concrete tunnel, No. 2, for the board of water supply of New York. General contractors' bids will be opened Sept. 25, with contracts to be let on four sections. Except for about a mile and a quarter of 15-foot and 3700 feet of 21-foot, the tunnel will be 17 feet in diameter. It will be 20 miles long, running from Yonkers, N. Y., to lower Brooklyn.

Following is a classification of the iron and steel required: Structural steel roof support for the four sections, 900, 750, 500 and 600 tons; steel intelining, 790, 285, 1700 and 850 tons; steel sheet piling, 2500, 65, 425 and 500 tons; reinforcing steel, 750, 150, 950 and 1000 tons; and galvanized sheet steel, 30 tons for the first; none second; 25 tons for the third; and none for the fourth.

Gratings, ladders, doors and frames will require 20 tons for first and second; 42 tons third and 35 tons fourth; miscellaneous cast iron, wrought iron and steel; 600, 42, 50 and 75 tons; cast steel pipe and fittings, 13, 30, 70 and 100 tons; cast iron pipe and fittings, 60 tons for the first; none, second; 60 tons for the third, and steel pipe conduits, none for the first three, but 190 tons for the fourth section.

This makes for a total of 6213, 1692, 4917 and 4350 tons for the four sections. In addition is metal work to be furnished by the city and set by the contractors as follows: 500, 500, 1900 and 950 for the four sections.

Steel forms for tunnel and shaft linings, etc., amounting to fully 1000 tons, will be required as will 68,000 feet of 2-inch or smaller steel pipe for grouting.

Steel and Cast Pipe in Conflict at Dallas

Austin, Tex., Sept. 11.—Settlement of the controversy between city officials of Dallas whether steel or cast iron pipe shall be purchased and used in construction of a new system of water mains is awaiting appointment by Gov. Dan Moody of a successor to the late State Fire Insurance Commissioner T. M. Campbell.

Shortly before his recent death Mr. Campbell notified the city commission of Dallas that the use of steel pipe would carry an insurance penalty of 5 cents per $100 but that this penalty would be waived if the National Board of Fire Underwriters approved steel pipe. Before further action could be taken Mr. Campbell died, and the matter must be taken up with his successor before any contract for pipe can be executed.

The fact that the order for pipe will involve an expenditure of more than $1,000,000 has aroused unusual interest. The city commission ordered the contract for steel pipe be awarded the Uvalde Construction Co. Mayor Burt vetoed this order on the ground he wanted the opinion of engineers as to the best kind of pipe to use before any contract was entered into. Mayor Burt also announced that he will insist on all bids being re-examined and that he will not approve any contract for the 17 miles of new pipe until engineers of the water department, the consulting firm of Fuller & McClintock and the Ulrickson city planning supervisory committee have offered definite recommendation. A $250,000 steel fabricating plant will be built by the Wyatt Co. in Dallas to supply half of the steel pipe to the Uvalde Construction Co., if this company receives the award, it is understood.

Less Trackwork Shipped

New York, Sept. 11.—American Iron and Steel institute figures place August shipments of trackwork at 11,050 tons, or 736 tons less than in July and 2347 tons under last August.

Production of Domestic Manganese Is Growing

WASHINGTON, Sept. 11.—All officers were re-elected by the American Manganese Producers association at its first annual convention at the Mayflower hotel, Washington, Sept. 10-11. The officers who will again direct the activities of the organization which was established about one year ago, are: President, J. Carson Adkerson, Hy-Grade Manganese Ore Co., Woodstock, Va.; vice president, John H. Cole, Domestic Manganese & Development Co., Anaconda, Mont.; secretary, Harold A. Pumpelly, Domestic Manganese & Development Co., Anaconda, Mont.; treasurer, A. J. Seligman, Butte Copper & Zinc Co., Anaconda, Mont.; and chairman of board, Richard H. Brown.

Reports were made to the conference by the producers from various states and the concensus of opinion seemed to be that the development of manganese ore is going forward to such an extent that it will mean eventually a large part of the requirements of the United States can be met by domestic production. The purpose of the association is to encourage the mining of manganese in this country so that it will not depend on other countries for supplies.

Armando Roa, acting commercial attache of the Cuban Embassy, told the convention that in 1918 his country exported 76,043 tons of manganese to the United States. In 1927, only 4175 tons came into this country from Cuba, while during the first six months of this year only 1119 tons were imported into the United States from Cuba.

"A serious handicap in the growth and development of the manganese industry in Cuba," said Mr. Roa, "has been the lack of transportation facilities and the inaccessibility of most of these mines. This will be entirely overcome in the near future, when the new national highway now under construction by the Cuban government, will be opened for traffic."

"The State of the Manganese Industry," was the subject of the opening morning's session and Francis P. Sinn, New Jersey Zinc Co., New York, presided. "Recent Developments in Manganese Treatment," was the subject of the first afternoon's session over which Robert Dwyer of the Anaconda Copper Mining Co., New York, presided.

On Monday evening an informal dinner was held at which Herbert W. Smith, Union Carbide & Carbon Co., New York, was the toastmaster. The speaker of the evening was Major Alfred H. Hobley, United States army, who took as his subject, "Strategic Minerals."

The subject of Tuesday morning's session was "Types of Manganese Deposits," which A. J. Seligman, Butte Copper & Zinc Co., Anaconda, Mont., as chairman and in the afternoon the subject was the "Economic Aspects of the Manganese Industry," with Richard H. Brown, Manhattan Electrical Supply Co., New York, as chairman.

In the address of the president, J. Carson Adkerson said:

"The American Manganese Producers association was formed on Aug. 2, 1927, in Washington for the purpose of fostering the production, beneficiation, and use of domestic manganese bearing ores. Much has been accomplished in the short period which has elapsed since the association was organized, but today we stand too close to the work and form

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Industrial Men in the Day's News

William Hugh Coverdale, President, Gulf States Steel Co.

ALREADY having B. A., D. S., and LL.D., after his name, he now is able to add P., indicating the presidency of a company in which he for some time has held directorship.

DIVERSITY of interest never permits time to pall upon him, since he is actively identified with ships, coal, metals, oil, power, banks, railroads and now steel.

GOLFING, yachting and fishing at various clubs and farming at his summer home on Lake Ontario furnish the balance wheel for his numerous memberships in technical organizations.

DEXTEROUS—if not ambidexterous—mentality is possessed by William Hugh Coverdale, recently chosen president and director by the board of the Gulf States Steel Co., Birmingham, Ala., if the diversified list of his business connections and accomplishments is any criterion. This list includes shipping, shipbuilding and ship repairing; coal mining and the sale of coal and coal products; metal mining and smelting; oil and power production; banking and railroading; all in addition to his chosen avocation, that of consulting engineer as a member of the firm of Coverdale & Colpitts, 52 Wall street, New York, consulting engineers in the reorganization and management of railroad and industrial companies and in the examination of and reports on properties and projects. As president of the Gulf States Steel Co., he succeeds the late James Bowron, who was chairman of the board and to whom the duties of the presidency reverted about two years ago when C. A. Moffett retired.

For some time Mr. Coverdale has been a director of the Gulf States company and its consulting engineer, latterly in connection with its $4,000,000 expansion program of modernization, which includes remodeling its blast furnace and electrification of much of its mill equipment.

Gifted with remarkable executive ability which ever has accompanied his keen mind, Mr. Coverdale is president of the Canada Steamship Lines, Ltd.; president of the Century Coal Co.; president of the Midland Shipbuilding Co.; president of the Davie Shipbuilding & Repairing Co.; chairman of the board of directors, Pierce Petroleum Corp.; vice president and director of the Consolidation Coal Products Co.; director of the Bank of America; Bankameric Corp.; Granby Consolidated Mining, Smelting & Power Co. Ltd.; director and consulting engineer of the Gulf, Mobile & Northern railroad; Jackson & Eastern Railway Co.; Birmingham & Northwestern Railway, and Meridian & Memphis Railway Co., and director of the Georgia & Florida Railway Co.

The close application to his duties made necessary by reason of their diversity and multiplicity has never caused him to forget the importance of a balanced ration of recreation. This latter has ever been looked upon by him as a means to an end—that end being a healthy mind and body. Hence in addition to yachting and golfing, fishing and farming have been his chief relaxations. These latter two forms of physical exercise have been obtained at his summer home, a 425-acre farm on Le Moines point, seven miles west of Kingston, Ont., fronting three miles on Collins Bay, Lake Ontario. His town residence is located at 952 Fifth avenue, New York, but it is his Canadian retreat to which he resorts whenever time and opportunity affords.

Mr. Coverdale was born at Kingston, Jan. 27, 1871, the son of William Miles and Fannie (O'Neill) Coverdale. He obtained his higher education at the Collegiate institute, Kingston, and Geneva college, Beaver Falls, Pa., from which he was graduated in 1891 with a B. A. degree. He was made a doctor of science by that institution in 1914 and in 1922 was granted an LL.D. degree by Queen's university, Toronto. He was married to Harriet E. Hinch-

liff of Rockford, Ill., daughter of William E. Hinchliff, June 30, 1911 and they have two sons and two daughters.

He is a member of the American Society of Civil Engineers; a member of the American Institute of Consulting Engineers and an associate member of the American Iron and Steel institute. He also maintains memberships in the following clubs: Metropolitan; Engineers'; Recess and Canadian (all of New York); Mount Royal; St. James; Forest and Stream, Mount Bruno and Beaconsfield (all of Montreal); Kingston Yacht and Cataraqui Golf and Country club (of Kingston) participating in affairs when he is able.

JOHN W. PLATTEN, chairman of the executive committee of the Gulf States Steel Co., Birmingham, Ala., has been elected chairman of the board of directors to succeed the late James Bowron. Mr. Platten is president of the United States Mortgage & Trust Co., 55 Cedar street, New York.

William H. Coverdale, member of Coverdale & Colpitts, consulting engineers, 52 Wall street, New York,

HERBERT P. HOWELL

succeeds Mr. Bowron as president of the Gulf States Steel Co., the duties of that office having devolved upon him during the past two years, since the retirement of C. A. Moffett.

Leslie E. Geohegan, vice president and general manager, has been elected director of the Gulf States Steel Co.

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J. O. Eaton, of Otis & Co., G. Guthrie Hunter and Robert A. Fairbairn, director of National Biscuit Co., have been elected directors of the International Combustion Engineering Corp.

* * *

Julius G. Bossert has been named manager of the Bossert Machine Co., Cincinnati, succeeding his father Ernest J. Bossert, whose death was announced in IRON TRADE REVIEW, issue of Sept. 6.

* * *

C. W. Heppenstall, president, Heppenstall Forge & Knife Co., Pittsburgh, sailed Sept. 8 for Europe on a combined business and pleasure trip. He will visit various countries on the continent and also England.

* * *

George N. Jeppson, vice president and production manager the Norton Co., Worcester, Mass., manufacturer of abrasives and machine tools, has returned after a summer passed in Sweden and Norway.

* * *

Walter H. Underwood, formerly general sales manager of the St. Louis Gas & Coke Corp. at St. Louis and Chicago, has been appointed St. Louis manager of the Binkley Coal Co., with offices in the Railway Exchange building.

* * *

Louis K. Liggett, chairman of the board of the Winchester Repeating Arms Co., New Haven, Conn., has been elected chairman of the executive committee, succeeding Frank G. Drew, who has become president of the board.

* * *

Robert F. Mehl, formerly with Harvard Engineering school, Cambridge, Mass., is now superintendent of the division of physical metallurgy at the Naval Research Laboratory, Anacostia, D. C. His laboratory is engaged in a large program on crystal structure research by X-rays and interesting developments are expected.

* * *

Harry F. Raab has been promoted to be assistant superintendent of the electrical department of the Cambria plant, Bethlehem Steel Co. succeeding Frank W. Cramer, recently resigned to become connected with the Republic Iron & Steel Co., Youngstown. Mr. Raab has been an employe of the Cambria plant for the past 15 years.

* * *

Herbert P. Howell, formerly head of the credit department of the Carnegie Steel Co., Pittsburgh, and for ten years vice president of the National Bank of Commerce in New York, has been chosen senior executive of the new Commercial National Bank & Trust Co., New York. Recently Mr. Howell has been president of Peierls, Buhler & Co., New York.

* * *

Bernard Lester, assistant industrial sales manager of Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has been placed in charge of the company's business relationships with architects, builders, building contractors and manufacturers of machinery and appliances. He will have his headquarters in New York. Mr. Lester has been with the Westinghouse company for more than 20 years and is a graduate of Haverford college.

* * *

George Batty has been appointed

GEORGE BATTY

research director of the Steel Castings Development bureau, Stock Exchange building, Philadelphia. Mr. Batty is a graduate of the Sheffield Technical school, England, and for many years has been employed as a steelmaker, works manager and consultant, both in this country and abroad.

* * *

John G. Griffin, superintendent of the tin plate and sheet metal department of the Bethlehem Steel Co., Sparrows Point, Md., has resigned and will be succeeded by Arthur D. O'Brien.

* * *

Wallace G. Imhoff, formerly metallurgist of the electrical materials department of Hubbard & Co., Pittsburgh, has become president of the Wallace G. Imhoff Co., Pittsburgh, consultant in zinc coating. Mr. Imhoff, a graduate of the Carnegie Institute of Technology, Pittsburgh, has had

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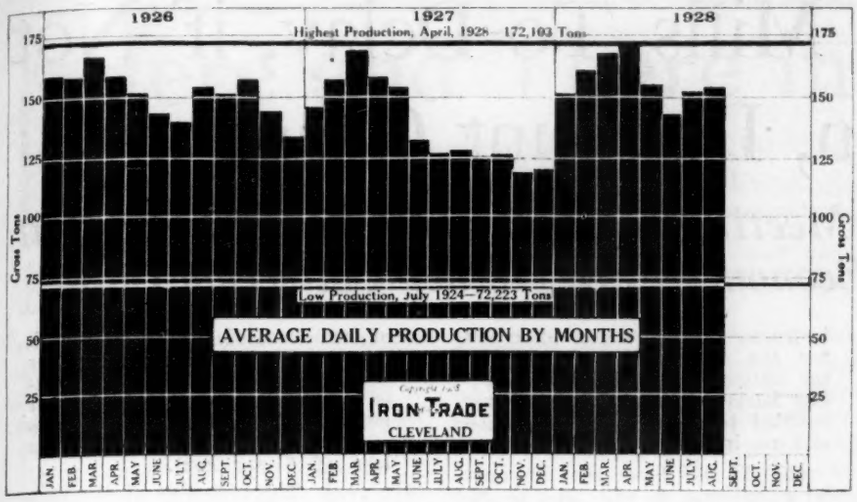

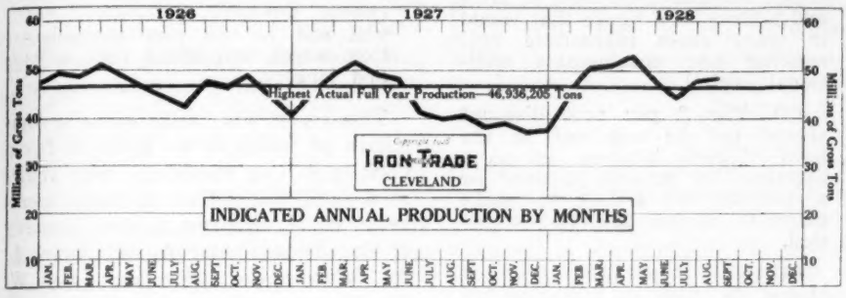

August Ingots Are a Record

RECORDS continue to be established in the production of steel ingots. The output for August made a small gain over July and was the best August in history. Further, the eight-month total and average daily rate were substantially better than the record for the same period last year. Steel ingot production turned upward in July; last year July had shown a loss and August registered only a small improvement over July.

According to statistics compiled by the American Iron and Steel institute, the output of open-hearth and bessemer ingots in August amounted to 4,178,481 gross tons. This was an increase of 366,908 tons over the 3,811,573 tons in July. August, however, had 27 working days, as compared with 25 in July. Average daily production in the month just passed was 154,759 tons, which, against the 152,463-ton rate of the preceding month, was a gain of 2296 tons, or 1.5 per cent. The previous record August was in 1926 when the daily rate was 153,345 tons for all ingots, including open-hearth, bessemer, electric and crucible. The rate for August, 1928, includes open-hearth and bessemer only, a fact which makes the new record more significant.

With a production of 154,759 tons per day in August and 311 working days in the year, the indicated annual rate of production was 48,100,000 gross tons. For July the rate was 47,500,000 tons. According to the institute, operations were at the rate of 82.09 per cent, against 80.88 per cent in July and 70.41 per cent in August, 1927.

For the eight months of 1928, production totaled 32,782,937 gross tons, against 30,510,071 tons in the corresponding period of last year. Daily production has averaged 157,610 tons, as compared with 147,392 tons in 1927. Operations for the same periods averaged 83.61 per cent in 1928 and 80.10 per cent in 1927.

Steel Ingot Production—1927-1928

94.68 Per Cent of Industry Reporting

Gross Tons

1927	Open-hearth	Bessemer	Monthly output companies reporting	Calculated monthly output all companies	Number of working days	Approximate daily output all companies	Per cent of operation
Jan.	3,042,133	545,596	3,587,729	3,789,874	26	145,764	79.21
Feb.	3,043,492	565,226	3,608,718	3,812,046	24	158,835	86.31
March	3,702,660	590,709	4,293,369	4,535,272	27	167,973	91.28
April	3,341,750	565,440	3,907,190	4,127,335	26	158,744	86.26
May	3,273,593	557,785	3,831,378	4,047,251	26	155,663	84.59
June	2,823,107	486,053	3,309,160	3,495,609	26	134,446	73.06
July	2,596,349	436,883	3,033,232	3,204,135	25	128,165	69.65
Aug.	2,806,347	505,596	3,311,943	3,498,549	27	129,576	70.41
Total 8 mos.	24,629,431	4,253,288	28,882,719	30,510,071	207	147,392	80.10
Sept.	2,622,977	471,548	3,094,525	3,268,881	26	125,726	68.32
Oct.	2,643,562	495,845	3,139,407	3,316,292	26	127,550	69.31
Nov.	2,478,627	481,599	2,960,226	3,127,015	26	120,270	65.36
Dec.	2,557,955	448,154	3,006,109	3,175,484	26	122,134	66.37
Total	34,932,552	6,150,434	41,082,986	43,397,743	311	139,543	75.83
1928							
Jan.	3,280,247	498,746	3,778,993	3,991,332	26	153,513	81.43
Feb.	3,308,728	521,366	3,830,094	4,045,304	25	161,812	85.84
March	3,700,411	567,309	4,267,720	4,507,520	27	166,945	88.56
April	3,509,637	564,039	4,073,676	4,302,573	25	172,103	91.29
May	3,397,631	581,949	3,979,580	4,203,190	27	155,674	82.58
June	3,016,487	527,351	3,543,838	3,742,964	26	143,960	76.37
July	3,075,247	533,550	3,608,797	3,811,573	25	152,463	80.88
Aug.	3,386,750	569,436	3,956,186	4,178,481	27	154,759	82.09
Total 8 mos.	26,675,138	4,363,746	31,038,884	32,782,937	208	157,610	83.61

Figures exclude crucible and electric ingots. Operation percentages for 1927 are based on an annual open-hearth and bessemer steel ingot capacity of 57,230,350 tons, as of Dec. 31, 1926; for 1928, on 58,627,910 gross tons as of Dec. 31, 1927.

To Honor Ore Pioneer

The Cornelius Board Family association of Middletown, N. Y., is planning the erection of a monument in the cemetery at Pompton, N. J., over the grave of Cornelius Board, a civil engineer and surveyor of England, who discovered iron deposits in the southern section of Orange county and named the place Sterling. Between 1732 and 1738, Board established a forge and produced the first iron manufactured in that section, which subsequently became an important iron producing district.

Ninety-two per cent of all natural gas produced last year was treated for the recovery of natural gas gasoline, which constitutes the most valuable by-product of the gas industry, according to a recent article in the *Magazine of Wall Street.*

Jobbers Ask Mills To Delay, if Not Abandon, Discount Change

Claim, at Pittsburgh Meeting, That Drop to Half of 1 Per Cent Would Be False Economy—See Higher Collection Cost

PITTSBURGH, Sept. 11.—Request that producers reconsider their recent announcement that the cash discount allowed for payment within ten days on invoices covering steel sheets and cold-rolled steel strip be reduced on Oct. 1 from 2 per cent to one-half of 1 per cent was made here Sept. 5 by members of the metal branch of the National Hardware association in their joint meeting with steel mill representatives. This gathering was called by F. O. Schoedinger, Columbus, O., chairman of the metal branch of the association, and attended by representative jobbers from various sections of the country and executives of leading sheet and cold-rolled strip producing companies.

Postponement Sought

Producers were asked by the jobbers not to consider the subject as a closed one but to give it more careful consideration and either to rescind the announcements or at least to postpone the date on which it is scheduled to go into effect for 30 or 60 days.

The joint meeting held in the afternoon followed a morning session attended only by warehouse representatives. At the earlier gathering, a report was drawn up by a special committee and approved by those in attendance. This report, presented to mill executives, read as follows:

"Your committee wishes to present as a result of the deliberation of the special meeting the following resolution which was originally adopted in 1899, when a similar movement to lower the cash discount was proposed.

" 'That it is the sense of the National Hardware association that the discount, 2 per cent for cash in ten days, formerly given by the manufacturers of steel and iron goods, be not construed as bank interest, but as a premium for prompt payment and as an insurance or protection of credits, and further that such or similar discounts be retained where still allowed, and that we urge its restoration where it has been discontinued.' "

The reasons for this are as follows:

(1) The cash discount is an insurance or protection of credit for the reason that it permits the extension of credit on a 10-day basis to those who are only entitled to credit for this period and no longer.

(2) If the 2 per cent discount is withdrawn, it will tend to increase accounts receivable of mills and jobbers to a figure that would in many cases necessitate refinancing and considerable additional capital.

(3) The 2 per cent discount should not be regarded in the light of bank interest, but as a premium for prompt payment or a penalty for failure to make payment within the 10-day period.

(4) The 2 per cent discount should be and is generally regarded as a legitimate item of cost just as raw material, labor, freight, etc., and should be always added as such by all mills and manufacturers.

(5) The reduction of the cash discount would reduce net profits of jobbers, which are now approaching the vanishing point. It can be definitely proven from reports compiled by our association.

(6) The reduction of the cash discount by the sheet steel mills would set an example for similar action by other groups of manufacturers.

Jobbers Cannot Cut Discount

(7) It would not be possible for jobbers of sheet steel, hardware and kindred lines to reduce their cash discount to one-half of 1 per cent to their trade for the reasons given in articles 1 and 2, and also because of the diversity of the lines distributed by them and because of the competitive condition among the hundreds of distributors handling sheet steel whose territories overlap.

(8) We understand the chief contention of the mills in proposing the reduction of the 2 per cent cash discount is because they claim it is costing them 36 per cent. We wish to refute this statement and point out the fact that the only cost to them is the interest rate that they are compelled to pay on their account receivables which is offset by the penalty of 2 per cent collected from those who do not discount.

(9) The jobbers can only figure a 2 per cent on the number of turnovers of their stock which average four times per annum, or 8 per cent on the amount invested in stock. The one-half of 1 per cent discount, if put into effect, will show the jobbers a loss of 6 per cent.

(10) The reduction of the cash discount will not only greatly increase accounts receivable, but will add to the cost of collection, which will affect both mills and jobbers.

This report was prepared by a committee of which R. H. Lyon of Lyon, Conklin & Co., Baltimore, was chairman, and the following were members: W. H. Donlevy, Carter, Donlevy & Co., Philadelphia; A. W. Howe, L. A. Osborne Co., Cleveland; and W. B. Richards, Richards & Conover Hardware Co., Kansas City, Mo.

Small Lot Discount Holds

Cleveland, Sept. 11.—Cleveland sheet jobbers for the time being are adopting the new cash discount terms of one-half of 1 per cent so far as shipments out of mill are concerned. The old 2 per cent cash discount will apply on the smaller shipments out of warehouse.

Good Demand for Small Tools in East

Boston, Sept. 10.—The small-tool business is active throughout New England, and machine tools are in good demand for this time of year. Greenfield Tap & Die Corp., Greenfield, Mass., reports a heavier production to date this year than during the same period last year. Standard Screw Co., Hartford, Conn., also reports production ahead of last year. Geometric Tool Co., New Haven, Conn., manufacturer of precision instruments and small tools, has been operating at practically full schedule all year. Another full-schedule plant is Pratt & Whitney Co., Hartford, Conn., manufacturer of small tools and machine tools. This company has sufficiently heavy orders in hand to insure full-time operation for the balance of the year.

Here and There in Industry

Timely Information Which Records Developments in Various Lines of Productive Enterprise

AETNA-STANDARD ENGINEERING CO., Youngstown, O., is consolidating its engineering departments at Youngstown. Employes of the engineering department at Warren, O., and Ellwood City, Pa., will be removed to the new consolidated headquarters. C. L. Taylor, formerly vice president and chief engineer of the Morgan Engineering Co., Alliance, O., is vice president in charge of engineering. R. C. Steifel, who has been consulting engineer, will continue as vice president and consulting engineer, giving his entire time to Aetna business.

* * *

CADILLAC MALLEABLE IRON CO., Cadillac, Mich., is extending its foundry and increasing the capacity of its annealing ovens.

* * *

AIR REDUCTION CO. INC., New York, has bought the business and property of the Ohio Oxygen Co., Niles, O., making the thirty-seventh plant in its chain.

* * *

GIRARD SMELTING & REFINING CO., Philadelphia, has completed purchase of the plant and real estate of the Tacony Steel Co., at the Delaware river and Pennsylvania railroad. It includes 46 acres and buildings.

* * *

HICKMAN, WILLIAMS & CO., have moved their Philadelphia district sales office from the Widener building to rooms 1604 and 1605 in the new building at 1500 Walnut street.

* * *

R J. DOWD KNIFE WORKS, Beloit, Wis., advises that it has not been taken over by the A. A. Simonds-Dayton Co., Dayton, O., or any other company, as has been reported. It is continuing its separate existence as during the past seventy-one years.

* * *

ROBERT MITCHELL CO., Montreal, has completed its plan of expansion by the purchase of the business of John Watson & Sons Ltd., Montreal, which will be operated as the architectural iron division of the Mitchell company. Norton Watson has joined the Mitchell sales staff, and manufacturing operations will be carried on by the former staff under the direction of Herman Sontheim.

* * *

DIRECT CONTROL VALVE CO., New York, has bought the Lawler Water Feed & Damper Regulator Co., from James J. Lawler, inventor of the direct control valve, and his sons. The plant of the Lawler company at Mount Vernon, N. Y., will be moved to Milwaukee and combined with that of the Milwaukee Valve Co., which has a contract with the Direct Control Valve Co. for the manufacture of parts of the valve.

* * *

GARDNER MOTOR CO., St. Louis, has been organized to build airplanes, the fifth concern in St. Louis engaged in construction of aircraft. Amos O. Payne, chief engineer of the Swallow Airplane Co., Wichita, Kans., has resigned to become technical executive of the new company. He is a director of the new school of aeronautics at the University of Wichita. The other St. Louis companies manufacturing airplanes are the Curtiss-Robinson Co., the Mahoney Aircraft Co., the Cardinal Aircraft Co. and the Parks Airlines.

* * *

HK. FERGUSON CO., Cleveland, has taken two contracts for industrial construction. One is for additions as part of a general betterment program by the Transue & Williams Steel Forgings Corp., Alliance, O. F. W. Trabold is president and H. W. Woolf secretary of the Transue & Williams corporation. The other contract is for three additions to the plow production plant of the International Harvester Co. at Canton, Ill. Additions will be made to the grinding building, the steel storage and steel shearing departments. The steel storage building will be 32 feet high, of unusual construction to house large machinery. H. W. Bland is plant engineer.

* * *

AJAX ELECTROTHERMIC CORP., Trenton, N. J., and its licensees in Europe have sold and installed a number of its high-frequency induction furnaces in the past few months. Sales of 150-kilowatt furnaces in the United States include: Hoskins Mfg. Co., Detroit; Heppenstall Forge & Knife Co., Pittsburgh; Watertown arsenal; 100 kilowatts, General Fire Extinguisher Co., Providence, R. I.; 35 kilovolt-amperes, National Tube Co.; Western Electric Co.; United States Assay Office; American Car & Foundry Co.; Carnegie Steel Co.; Yale university; Duriron Co., Dayton, O.; Rensselaer Polytechnic institute; Carnegie Institute of Technology, Pittsburgh; Vanadium Alloys Steel Co., Latrobe, Pa.; 15 kilovolt-amperes to Lehigh university; 3 kilovolt-amperes to General Electric Co.; University of Illinois; Virginia Polytechnic institute; United States bureau of mines, Tucson, Ariz.; bureau of standards, Washington. In England 150-kilowatt furnaces have been sold to Allen Everitt Sons; Henry Wiggins & Co.; Arthur Balfour Co.; Telegraph Construction & Maintenance Co. Ltd.; 15 kilovolt-amperes to Standard Telegraph & Cables Ltd.; 3 kilovolt-amperes to Electric Furnace Co. In France 150-kilowatt furnaces have been sold to MM. S. A. de Commentry-Fourchambault & Decazeville; Jacob Holtzer Co.; Compagnie Francaise de Metaux. In Germany the following were sold; Fereinigen-Stahlwerke-Bochumer-Verein, 300-kilowatt; Stahlwerke-Becker, Dusseldorf, 300-kilowatt; I. G. Farbenindustrie, Ludwigshafen, 45-kilowatt; Dr. Alexander Wacker, AG. Werk Tschecnitz, 35-kilowatt; Technical high school, Charlottenburg, 16-kilowatt; 8 miscellaneous 6-kilowatt laboratory furnaces. Metallverke AG. Dornach, Switzerland, has bought a 100-kilowatt furnace and the University of Saskatchewan, Canada, one of 3 kilowatt-amperes.

* * *

OHIO FOUNDRIES ASSOCIATION INC., has been incorporated as successor to the Ohio State Foundrymen's association. The new name is considered more closely descriptive of the group of foundries rather than of individuals. Officers of the association are: President, C. C. Smith, Toledo Steel Castings Co., Toledo; vice president, D. McDaniel, Hamilton Foundry & Machine Co., Hamilton; treasurer, E. Sands, Superior Gas Engine Co., Springfield. No successor has been chosen to fill the vacancy in the office of secretary, following the resignation of Arthur J. Tuscany,

who has become manager of the Gray Iron institute, Cleveland.

* * *

WINSTON BROS. CO. and Winston-Dear Co., constructors and engineers, have been consolidated as Winston Bros. Co., with headquarters at 801 Globe building, Minneapolis.

* * *

AMES SHOVEL & TOOL CO., North Easton, Mass., has moved its executive offices, including sales and administrative departments, from Boston to North Easton. This gives closer contact of sales and manufacturing departments.

* * *

INTERSTATE RIVET CO., recently formed, which purchased the rivet business of the Interstate Iron & Steel Co., Chicago, has erected a one-story factory building at 6600 South Oak Park avenue, Chicago, containing 20,000 square feet of floor space.

* * *

CARNEGIE STEEL CO. has installed facilities at its McDonald plant, Youngstown, O., for pickling and oiling, and pickling and liming its various rolled steel products. This enables the company to furnish any of its steel products in a condition protected against subsequent rust.

* * *

AMERICAN BARGE LINE took out another tow of Pittsburgh products, Sept. 11, consigned to Memphis and New Orleans. The tow consisted of 10 barges, containing cotton ties, pipe, creosote oil, and a miscellaneous barge containing 140 tons of package freight, including sheet steel, tin plate, plate glass and lubricating oil. One mat barge constructed in Pittsburgh boat yards will be delivered to the Mississippi river commission, Vicksburg, for use in flood prevention work.

* * *

WORCESTER COUNTY (MASS.) chapter of the American Society of Safety Engineers has elected Harold L. Nickerson, Crompton & Knowles Loom Works, and Col. Howard W. Robbins, Norton Co., vice chairmen. D. Frank Lord, M. J. Whittall Associates, is president. Other members of the chapter include Matthew Fish and R. R. Wallace, American Steel & Wire Co.; William Harmon, F. D. Lindquist, Augustus Lund and T. L. Nestor, Crompton & Knowles Loom Works; and C. S. Holbrook, Worcester Pressed Steel Co.

* * *

LEINERT VALVE CO., Chicago, has received an order from a German steelworks for automatic plate valves, gas blowing engine piston rings of 1500 millimeter diameter, and 2000 meters of wire rope 1 11/32-inch diameter and 66,000 kilogram strength. The order is the sequel to a study by engineers and executives of this steelworks of the heavy machinery used in Chicago district works. Charles H. Leinert is president and general manager of the Leinert company, Carl C. Roessler is vice president and Max L. Teich treasurer.

* * *

BINGHAM & TAYLOR CORP., Buffalo, has been formed to take over the steel foundry of the W. P. Taylor Co., 575 Howard street. Operation will be continued under the same program as in the past. James W. Gibney is president of the new company, William J. Gibney, vice president, and J. H. Gardner, secretary and treasurer. Directors consist of these officers and W. H. Crosby, Olin Dibble, A. C. Smith and Burt C. Weber. The foundry has a capacity of 150 tons per day. Alloy steel, bronze and nickel castings will be added to the output by the new company. The foundry was established in 1849 by Robert Bingham.

Seventh Generation Helps to Break Ground for New Ames Plant

TWO great-great-great granddaughters of Oliver Ames, who in 1802 took over from his father, Capt. John Ames, the shovel works founded by the latter in 1774, helped break ground, Aug. 29, for the new blade factory of the Ames Shovel & Tool Co., North Easton, Mass. The structure, to be one-story, 60 x 400 feet, of reinforced concrete, will enable the company to rearrange operations in the present plant at North Easton. Officers of the company, directly in the rear of the children, are Samuel S. Early, assistant to the president; A. H. Daggett, treasurer; W. B. Hopkins, director; Richard Harte, director, and William A. Ready, president.

To Present Interesting Papers at Meeting

Headquarters for the fall meeting of the American Electrochemical society, Sept. 20-22, at Charleston, W. Va., will be at Hotel Kanawha; all technical and scientific sessions and entertainment will take place here. The program will be opened at noon, Sept. 20, by an informal round table discussion on "Electrometallurgy of Nickel Alloys." Plant visitations are scheduled for Thursday and Friday afternoons. Several interesting papers will be presented at the various technical sessions, among which are: "Thermoelectric Measurements of Temperatures Above 1500 Degrees Cent.," by H. L. Watson and H. Abrams, General Electric Co., Schenectady, N. Y.; "Corrosion in the Tin Can," by R. H. Lueck and H. T. Blair, American Can Co., San Francisco; "Steel Anodes for Chromium Plating," by E. M. Baker and E. E. Pettibone, University of Michigan, Ann Arbor, Mich.; and "Porosity of Electrodeposited Chromium," by E. M. Baker and A. M. Rente, University of Michigan, Ann Arbor, Mich.

South Needs More Cars

Birmingham, Ala., Sept. 11.—Freight car requirements of iron and steel producers in the southeastern shippers' advisory board region will be 10 per cent greater in the last quarter of 1928 than in the same period of 1927. Coal and coke producers state they will need fewer cars. For the southeastern region as a whole an increase of 4½ per cent in car requirements for the last quarter over the same period of 1927 is anticipated.

British Markets Are Improving

Iron and Steel Orders Gain in All Districts—Contract Placed for 47,000 Tons of Rails for South Africa—Pig Iron Exports Pick Up, with Some Shipments to Germany —Steel Entente Expected To Continue Present Quotas

European Headquarters,
IRON TRADE REVIEW,
Caxton House, Westminster, S. W.1

LONDON, Sept. 11.—(*By Radio*)—An improvement in the tone of the iron and steel markets is reported in all districts of Great Britain. Steelmakers are obtaining fair size railroad and constructional orders. Dorman, Long & Co. have booked 47,000 tons of rails for delivery to South Africa. Demand for galvanized sheets is strong, especially for South America and India. Mills are booked eight weeks ahead. The market for tin plate is fairly active, orders being placed for delivery to South America, the Far East, Holland and Spain.

After an unusually long period of dullness, pig iron exports from Middlesbrough have picked up, the total for August being 8446 tons.

A report from Brussels states the Belgian market is strong, steelmakers doing a good business with South America, India, Japan and China. Demand for iron and steel from North America, however, is falling off.

German export business is improving. Substantial inquiries are being received from Japan. British pig iron is making its appearance in the German market.

A report from Paris states market conditions are satisfactory. The Continental Steel Entente will meet this month. Production quotas are expected to be maintained as at present. Manufacturers of wire products may reconstitute their syndicate.

British Steel Market Feels Autumn Impetus

BIRMINGHAM, Eng., Aug. 31.—(*European Staff Service*)—The tone of the markets in every instance is hopeful, probably because the holiday month is over and consumers will be more inclined to talk business in September. In the Middlesbrough district the resumption has not brought marked accession of activity, but sentiment is better and traders feel the worst is over. The Continental market is firm and little foreign material is being bought by British users but it is rather puzzling to the home market to find that the business which was formerly going abroad has not come to the British mills as everyone expected. Doubtless some business has been diverted, but it is evident that users are holding back in case there should be relaxation of Continental rates. This would appear unlikely as Continental works are well booked.

Sterling $4.85

The steel situation is unchanged, prices for joists and sections having recently been confirmed. Midland engineers complain that structural contracts are all small, generally under 1000 tons, and competition is keen. In some cases prices are cut so finely as to indicate that the firm tendering will probably use foreign material. Otherwise it would not pay them to take the work. A great deal of constructional work in and around Birmingham absorbs good quantities of steel; one large warehouse now being erected will absorb over 1000 tons, and there is no lack of enterprise in the building of cinemas. Bolton & Lakin, Birmingham contractors, have just secured an important contract for rebuilding the harbor at Littlehampton,

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, September 10	*British* Gross Tons U. K. Ports	£ s d	*French* Metric Tons Channel Ports	£ s d	*Belgium and Luxemburg* Metric Tons Channel Ports	£ s d	*German* Metric Tons Rotterdam or North Sea Port	£ s d
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$16.01	3 6 0*	$15.28	3 3 0	$15.28	3 3 0	$15.76	3 5 0
Basic	15.76	3 5 0	15.28	3 3 0	15.28	3 3 0	15.28	3 3 0
Basic-bessemer	16.73	3 9 0†	14.79	3 1 0	14.79	3 1 0	14.55	3 0 0
Hematite, Phosphorus 0.02-0.05	16.61	3 8 6	12.09	3 0 9*	.....	.....	.....	3 10 0
SEMIFINISHED STEEL								
Billets	$29.10	6 0 0	$23.77	4 18 0	$23.77	4 18 0	$23.77	4 18 0
Wire rods	41.23	8 10 0	29.10	6 0 0	29.10	6 0 0	29.59	6 2 0
FINISHED STEEL								
Standard rails	$37.59	7 15 0	$39.92	6 7 6	$39.92	6 7 6	$30.92	6 7 6
Merchant bars	1.55c	7 2 6	1.34c	6 2 0	1.34c	6 2 0	1.34c	6 2 0
Structural shapes	1.60c	7 7 6	1.08c	4 18 0	1.08c	4 18 0	1.10c	5 0 0
Plates, ship, bridge and tank	1.76c	8 2 6	1.42c	6 8 9	1.42c	6 8 9	1.42c	6 9 0
Sheets, black, 24 gage	2.17c	10 0 0	2.39c	10 17 6	2.39c	10 17 6	2.19c	9 19 0
Sheets, galvanized, 24 gage, corrugated	2.90c	13 7 6	2.98c	13 11 3	2.98c	13 11 3	2.93c	13 6 0
Bands and strips	2.22c	10 5 0	1.55c	7 1 3	1.55c	7 1 3	1.49c	6 15 0
Plain wire, base	2.12c	9 15 0	1.60c	7 5 0	1.60c	7 5 0	1.60c	7 5 0
Galvanized wire, base	2.93c	13 10 0	1.98c	9 0 0	1.98c	9 0 0	2.01c	9 3 0
Wire nails, base	2.38c	11 0 0	1.65c	7 10 0	1.65c	7 10 0	1.65c	7 10 0
Tin plate, base box 108 pounds	$ 4.43	0 18 3	.....	.....	.....	.....	$ 6.79	1 8 0

*Francs

Domestic Prices at Works or Furnace—Last Reported		Francs		Francs		Marks
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$16.01	440(2)	$17.20	585	$16.26	78
Basic pig iron	15.76	475(1)	18.57	540	15.01	88
Furnace coke	3.15	150	5.87	185	5.14	21.50
Billets	29.10	555	21.70	925	25.72	121
Standard rails	1.79c	810	1.46c	1,100	1.43c	140
Merchant bars	1.57c	710	1.28c	1,055	1.37c	141
Shapes	1.71c	650	1.17c	920	1.20c	138
Plates, ship, bridge and tank	1.87c	855	1.54c	1,155	1.50c	158
Sheets, black, 24 gage	2.28c	1,620	2.92c	1,880	2.44c	225
Sheets, galvanized 24 gage, corrugated	2.90c	1,895	3.41c	2,975	3.87c	350
Plain wire	2.12c	950	1.71c	1,500	1.95c	230
Bands and Strips	2.22c	790	1.42c	1,350	1.75c	164

*Middlesbrough; †Scotch foundry iron; ‡delivered; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 13s 0d ($3.16) f. o. b. Ferromanganese £21 14s 0d ($105.25) delivered Atlantic seaboard, duty paid. German ferromanganese £15 0s 0d ($72.90) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

Sussex, and this will be worth approximately £57,000.

British locomotive builders have also been fortunate in securing orders for India and South America. The North British Locomotive Co., Glassgow, has just been awarded an order for 18 superheated locomotives of high power and special design by the Bengal Nagpur Railway Co. The Argentine Transandine Co. Ltd. has ordered from Beyer Peacock & Co., Manchester, three locomotives and the Buenos Aires Central railway has bought six superheated locomotives from Kerr Stewart & Co. Ltd. of Stoke on Trent. Midland rolling stock builders are busy both on new work and repairs.

Midland makers of pig iron would welcome some relief from the depression which overhangs the trade. They were inclined to be hopeful on the Birmingham market yesterday and reported there were definite signs of improved buying. An encouraging feature is steadiness of prices, but the disappointing part is the size of orders, which call for such trifling amounts as ten tons. The output is small but with only a poor outlet for iron, stocks are piling up. The hematite trade of the northeast coast shows a distinctly better tone. Sales are improving and stocks diminishing, so that Dorman Long & Co. have felt justified in restarting a hematite furnace. Quotations for mixed numbers range from £3 9s ($16.72) to £3 10s ($16.97) per ton. A certain amount of Middlesbrough pig iron is being exported, but the hopes of improvement are centered in the home market.

In the galvanized sheet trade mills are well booked. The minimum price is £13 7s 6d ($64.86) and this relates chiefly to export sales. But as much as £13 12s 6d ($67.56) has been realized to home buyers. The Indian trade has not yet expanded to any extent and reports of Belgian competition in the Indian market are talked of by Birmingham merchants.

An order for 1,000,000 boxes of tin plates is said to have been placed in South Wales, and if this is correct will be a substantial addition to the available work in the industry for some time to come. According to the *Western Mail* the Asiatic Petroleum Co. have placed this order, which will be distributed over various works, although that firm has a large interest in the Elba tin plate works at Swansea. The tin plate market is steady at 18s ($4.36) to 18s 3d ($4.42).

British Prices Lower Than Year Ago

London, Aug. 27.—(*European Staff Service*)—Board of trade returns for July, 1928, give average British export prices per gross ton for certain iron and steel products. These prices are compiled from actual contracts which were made several months ago, and this accounts for the difference between these quotations and the base prices regularly quoted in our columns.

Compared with a year ago, prices in July this year were generally lower, except for rails and plates. Compared with the preceding month, prices were generally higher, except for beams and rails.

Foundry pig iron was 13s 2d ($3.19) less than a year ago and 2s 9d (66.00c) more than in June this year. Beams were 5s 3d ($1.27) less than a year ago and £1 11s 8d ($7.68) less than in June this year. Rails were 2s 7d (62.00c) more than a year ago and 10s 2d ($2.46) less than in June this year. Plates were 6s 7d ($1.59) more than a year ago and 10d (20.00c) more than in June this year. Black sheets were £1 3s 8d ($5.74) less than a year ago and 5s 6d ($1.33) more than in June this year. Galvanized sheets were £1 12s 7d ($7.90) less than a year ago and 4s 3d ($1.03) more than in June this year. Tinplates were £1 2s 7d ($5.47) less than a year ago and 5s 8d ($1.37) more than in June this year.

July, 1928

	£	s	d	$
Foundry pig iron	3	14	0	17.95
Beams	8	1	6	39.16
Rails	8	7	0	40.50
Plates	10	18	0	52.86
Black sheets under ⅛-inch thick	12	6	0	59.65
Galvanized sheets	15	13	0	75.90
Tinplates	19	16	0	96.03

German Steel Tonnage Gains in July

Berlin, Aug. 27.—(*European Staff Service*)—Output of pig iron in Germany during July was slightly higher than in June. July output consisted of 663,434 tons of basic, 202,427 tons of ferroalloys, 97,049 tons of foundry, 68,691 tons of hematite 2219 tons of direct castings, and 874 tons of gray forge pig iron.

July output of steel ingots and castings was composed of 1.289,933 tons of steel ingots and 21,201 tons of steel castings. Ingot production consisted of 658,706 tons of basic open-hearth steel, 601,321 tons of basic bessemer steel, 15,666 tons of acid open-hearth steel, 12,125 tons of crucible and electric steel, and 2115 tons of ingot iron.

The following table gives comparisons in metric tons:

Mon. ave.	Furnaces on 31st	Pig iron	Steel ingots and castings	Finished steel
*1913	.....	909,640	993,640	970.240
1925	† 83	848,060	1,016,210	853,840
1926	†109	803,625	1,028,470	856,340
1927	†116	1,091,875	1,358,780	1,069,930
1928				
Jan.	116	1,180,239	1,469,455	.....
Feb.	115	1,122,384	1,322,695	1,040,875
Mar.	113	1,170,476	1,421,524	1,145,070
April	107	1,045,468	1,161,405	917,673
May	104	1,044,046	1,247,781	986,459
June	103	1,021,350	1,294,583	1,067,646
July	100	1,034,694	1,311,134	1,026,333

*In present boundaries.
†On last day of year.

French Steel Prices Tend to Higher Levels

PARIS, Aug. 31.—(*European Staff Service*)—Conditions in the French iron and steel market are satisfactory and the tendency toward higher prices is maintained in most departments. Present prices leave a satisfactory margin of profit and iron and steel works are enjoying a period of prosperity. Profits, however, will be limited by increases in taxation and social charges which have appeared since 1927. At present there is a rather serious menace for the whole of the French industries, due to the fact that extreme sections in labor circles are agitating for a general increase of wages. This has particularly been the case in the collieries, but demands of the workers have been turned down, employers pointing out that the cost of living has not been increasing during recent months, and that any further increase in salaries would result in the closing down of mines. On the other hand, there is no unemployment to speak of in France, and, in fact, certain iron and steel works are hampered by scarcity of skilled labor.

Franc—3.91c

Domestic demand for iron and steel is on the increase, the volume of export orders is considerable, and prices generally have increased by about 1s (24c) per ton since the previous week. Domestic pig iron prices have been maintained at their previous level, and the pig iron syndicate has reserved 30,000 tons for requirements of foundries during September. Semi-finished steel is quiet and, in fact, only a few mills are in the market. The comptoir has maintained its previous quotations for blooms and billets.

There is a considerable demand for merchant bars, as consumers are anxious to place orders in fear of a further appreciation of prices. Bars now are sold at from 720 to 740 francs ($28 to $28.80) per ton. The underlying conditions of the market are good, as it is expected that the recent law passed with the object of encouraging house-building will afford further demand for steel. It is announced that the government has approved the construction of a canal along the Moselle river, which will enable the Lorraine steelworks of Hayange and Hagondange to ship their products by water. Three-millimeter sheets are quoted at 1050 francs ($41), and the base price of fine sheets in 1120 francs ($43.70).

Considerable activity is noted in the automobile industry. Citroen is putting the final touches on a 6-cylinder car which, it is said, will be sold at about 35,000 francs ($1360) M. Rosengart, whose former associations were first with Citroen and then with Peugeot, now is manufacturing a 5-horsepower car of his own.

German Shipments Gain in First Half

Berlin, Aug. 27.—(*European Staff Service*)—During the first six months of this year exports of the principal iron and steel products, including

scrap, from Germany, were 2,453,110 metric tons, an increase over last year's figures which were 2,434,079 tons for the corresponding period. These figures include 105,160 tons of pig iron for this year and 203,335 tons of pig iron in the first six months of last year. Imports of iron and steel products into Germany during first half also showed a slight increase over last year's figures, the tonnage for this year being 1,361,116 metric tons, compared with 1,248,702 tons last year, in which pig iron figured for 154,287 tons this year and 100,421 tons last year.

During June the exports of the principal steel products were the highest this year at 432,603 metric tons. Among the principal items exported in June were: Bars, shapes, hoops and bands, 108,094 tons; rails, sleepers and track fastenings 55,259 tons; semifinished products 55,159 tons; wire rod and wire 33,600 tons; forged tubes 29,449 tons; plates and sheets, black, 28,897 tons; forgings 14,047 tons. The tonnage of pig iron and ferroalloys exported during June was 20,628 tons and the tonnage of scrap 26,111 tons.

Among the principal items imported during May were: Bars, shapes, hoops and bands, 67,980 tons, and 24,366 tons of semifinished products, the tonnages of the other items imported being less than 10,000 tons. The amount of scrap imported in June was 12,479 tons.

	IMPORTS		EXPORTS	
Mon. ave.	Pig iron	Other iron and steel	Pig iron	Other iron and steel
1925	17,190	103,525	18,540	277,190
1926	9,230	95,890	42,730	402,905
1927	23,895	217,505	29,910	347,645
1928				
Jan.	27,493	234,899	13,879	349,147
Feb.	23,086	217,238	21,579	369,197
March	19,068	229,267	26,488	408,310
April	27,113	219,298	19,583	393,227
May	26,742	159,708	18,445	380,025
June	31,422	145,783	20,628	432,603

Mine More French Ore

Paris, Aug. 28.—(*European Staff Service*)—A substantial increase has been registered in production of iron ore in France in the first half of this year, during which period the output reached 24,093,644 metric tons, compared with 21,406,734 tons in the corresponding period of last year. The record figure in the production of French iron ores was reached in March this year with 4,208,746 metric tons. Comparisons follow:

Mon. ave.	Production	Stocks at end of month
1913	1,826,500	.....
1925	2,943,204	.....
1926	3,269,033	.....
1927	3,723,200	.....
1928		
Jan.	4,122,386	2,668,569
Feb.	3,889,642	2,627,592
March	4,208,746	2,624,395
April	3,698,631	2,358,372
May	3,973,447	2,380,444
June	4,200,792	2,319,649

Luxemburg Output Down

Luxemburg, Aug. 28.—(*European Staff Service*)—Production of pig iron in Luxemburg in July was less than in June, the July output including 221,622 tons of basic bessemer pig iron and 3185 tons of foundry pig iron.

Output of steel ingots and castings in July was below June and included 205,645 tons of basic bessemer steel, 1951 tons open-hearth steel and 91 tons of electric steel.

Mon. ave.	Pig iron	Steel ingots and castings
1913	212,320	111,355
1925	196,940	173,855
1926	209,295	186,980
1927	226,115	205,850
1928		
Jan.	229,602	212,939
Feb.	220,114	205,053
March	240,234	220,309
April	226,983	202,586
May	233,806	214,756
June	230,484	214,925
July	224,807	207,687

French Shipments Less

Paris, Aug. 28.—(*European Staff Service*)—Exports of principal iron and steel products from France during the first half of this year were slightly less than during the corresponding period of last year, particularly in pig iron. For the first six months of this year total exports of pig iron were 299.645 metric tons, compared with 448,777 tons in 1927, a decrease of 33.5 per cent. The tonnage of the principal steel products exported during the first six months of this year was 2,082,249 metric tons, against 2,189,424 tons during the first half of 1927. The steel export figures include ingots, semifinished steel, rolled products, heavy forgings and scrap. In June exports of pig iron from France were the lowest this year.

During the first six months of this year France imported 21,933 metric tons of pig iron, compared with 17.246 tons in the corresponding period of last year. Imports of steel were 54,407 tons and 46,361 tons respectively. Comparisons are as follows:

	IMPORTS		EXPORTS	
Mon. ave.	Pig iron	Steel	Pig iron	Steel
1925	2,693	11,703	58,835	272,270
1926	1,990	11,930	58,545	264,530
1927	3,230	6,490	69,640	363,305
1928				
Jan.	2,472	3,663	57,496	328,269
Feb.	5,246	7,548	49,515	415,148
Mar.	4,422	8,913	57,534	377,351
Apr.	2,864	10,348	46,499	319,753
May	4,506	10,803	48,725	319,028
June	2,423	13,132	39,876	323,300

French Coke Increases

Paris, Aug. 27.—(*European Staff Service*)—Production of coke at French collieries during the first half of this year shows a slight increase over the output during the same period of last year, the figures being 2,158,333 metric tons and 2,009,589 tons, respectively. The highest monthly output was registered in March this year with 369,360 tons. Imports of coke into France during first half were 2,828,441 metric tons, compared with 2,567,068 tons in the corresponding period of last year, while exports this year reached the low figure of 129,815 metric tons, against 159,582 tons in the first half of 1927. The exports of coke in June went particularly to Italy which purchased 14,763 tons, Switzerland 8806 tons, Yugoslavia 4219, Belgium and Luxemburg 2107 tons, Spain, Germany, Indo-China and Algeria, and other countries, taking small tonnages. Comparisons follow:

Mon. ave.	Production	Imports	Exports
1913	335,620	255,835	17,085
1925	255,410	416,880	39,440
1926	313,950	462,915	39,320
1927	339,015	395,580	33,430
1928			
Jan.	357,475	473,018	25,840
Feb.	343,186	411,455	23,119
Mar.	369,360	445,656	15,324
Apr.	360,446	482,575	22,689
May	367,725	526,593	12,366
June	360,141	489,144	30,507

German Locomotive Builders Seek State Aid

BERLIN, Aug. 27.—(*European Staff Service*)—Exports of German machinery have attained a record figure in the first half of 1928 with a total of 494,795,000 marks ($117,000,000), against 392,742,000 marks ($93,500,000) in the corresponding period of 1927. In addition, electrical machinery of a value of 109,667,000 marks ($26,000,000) was exported.

The four prominent German locomotive manufacturers, Borsig, Henschel, Maffei and Berliner Maschinenbau Gesellschaft, are now working closely together and have sent a memorandum to the German chancellor depicting the present situation in the industry. Before the war German railroads used to order from 1600 to 1800 locomotives a year. This enabled manufacturers to organize their works on a large scale and to enjoy a flourishing export business. Since the war the domestic business has dropped to a low level, from 7 to 10 per cent of prewar orders, and the industry is now disorganized and finds it difficult to meet foreign competition in export markets.

The authors of the memorandum have asked state assistance in the form of a preliminary credit of 50 million marks ($12,000,000) to be granted to the Empire Railroad Co., enabling it to contract for new locomotives. They also claim that orders should be divided among the concerns who are best equipped and who have maintained a hold on export markets, and that those factories which will consequently be eliminated from competition should receive some other form of production. The chancellor has replied that under present circumstances it will be impossible to pass sufficient orders to keep the works occupied and that economies must be realized by reducing the capacity of production.

The United Steelworks Corp. has dismissed 1400 miners and 25 members of colliery staffs and further notices were issued Aug. 15.

River Improvement Group Seeks Quick Action

Johnstown, Pa., Sept. 11.—The Kiskiminetas and Conemaugh River Improvement association will send a large delegation to the annual convention of the National Rivers and Harbors congress in Washington this year and will make an energetic demand for the early improvement of the Kiskiminetas and Conemaugh rivers. The party will be in charge of its president, S. J. Gallagher and secretary, Dr. S. J. McMeans, who stated that according to a recent survey the tonnage possibilities that would be moved by river are great as soon as the necessary locks and dams are provided. Among the applicants for an improved waterway is the Bethlehem Steel Co. which now is sending its shipment by rail to Glassport for reshipment by river. Others have joined the ranks of the association including R. B. Porter of the Lorain Steel Co.; Walter Schneider, National Radiator Corp.; and Harry Tredennick, president of the Haws Refractories Co. and chairman of the Johnstown chamber of commerce, all of Johnstown, Pa.

Shipping Interests View River Facilities

Pittsburgh, Sept. 11.—About 300 representatives of large-tonnage shipping interests of this district and railroad executives made a river inspection trip Sept. 6 in the Pittsburgh area. This trip was taken for the purpose of viewing the private facilities of individual industries for river shipping and the terminals of river transportation companies for handling general traffic, as well as to study the need for a modern terminal, municipally owned. This latter has been occasioned by the revival of river transportation which is anticipated upon completion of the Ohio river improvements in 1929 providing a navigable state throughout the year. Both Pittsburgh and the steel mills in the district are expected to benefit greatly by river transportation, due to their strategic location at the confluence of the Allegheny, Monongahela and Ohio rivers.

Ternes Standard Up

Washington, Sept. 11.—A questionnaire is being sent to the trade by the simplified practice division, department of commerce, in connection with a revision of the simplified practice for roofing ternes.

"Last year," says the division, "this recommendation was reaffirmed without change, and the survey upon which this action was based indicated an adherence of 100 per cent."

The standing committee on roofing ternes will take up the answer to the questionnaires at the forthcoming annual convention of the National Hardware association.

Boston Building Gains

Boston, Sept. 11.—The summer slump in building construction appears to have passed, according to reports of leading fabricators. Permits for this city for August were nearly double those of July. One of the largest items is a $250,000 schoolhouse. Much new work is in sight.

Production of Domestic Manganese Growing

(*Concluded from Page* 668)

too much of a part of it to attempt to act as historians of the industry for the past year. It may well be said that we have crossed the threshhold of accomplishment and have passed into the dawn of an era which is destined to bring forth much in the development of American manganese.

"As a national industry, the manganese industry was born during the World war, cast aside as an orphan during the postwar period and was finally adopted and redeemed by the manganese producers and property owners themselves, and with the strong arms of their combined support its feet have been planted on a firm foundation and today it takes its place as a growing industry among the basic industries of the United States.

"Manganese is absolutely essential in the manufacture of steel. Neither experiment nor research has developed a substitute. The United States consumes about 850,000 tons of manganese ore per year. About 800,000 tons are used as a deoxidizer, desulphurizer and hardener in steel. About 50,000 tons per year are used in the manufacture of dry cell batteries, brick, tile, chemicals and paint. The assurance of an adequate supply of manganese for American industries, in the event of a blockade or during a period of emergency, has, since the lesson learned during the World war, been a matter of grave concern to the United States.

"Among all the countries producing the greater portion of the world's steel, none has produced, within its own geographical boundaries more than a sufficient supply of manganese to meet its own needs. Most countries must import virtually all their requirements. The United States draws some manganese from India, Africa, and Brazil. A large part of our supply has been coming from Russia. Disturbances in Europe would seriously impair, if not entirely stop, the flow of manganese to this country. Each nation is attempting to determine and safeguard its own supply of manganese to meet an emergency. England, with foresighted policy, is lending encouragement to the development of deposits in India, and in the Gold Coast of Africa. Control of these properties is retained by Great Britain and the reserves are ear-marked to supply the needs of the British Empire in case of an emergency.

"For years past we have heard of the threatened deluge of foreign ores to our shores. It has served to retard development of American deposits until American industry had become resigned to the belief that there was little, if any, manganese in the United States. For the past several years I have attempted to call attention to the instability of the manganese situation in Russia. Today we hear the announcement that the American interests have withdrawn from the Russian fields and that the manganese concessions have been returned to the Bolshevik government. For the last year we have heard of immense developments in manganese going forward in Australia and in the Postmasburg district of Africa, but today we know that no developments in manganese are going forward in either of these districts and that no substantial developments are contemplated..

"I shall not attempt to go into detail in regard to the various developments going forward in the United States, but it is evident from a study of the manganese situation that the operators of America who are investing hundreds of thousands of dollars in the development of the manganese reserves of the country, are accomplishing far more for preparedness and national security than those who cry that we have no manganese and cannot develop an industry at home. It takes years and dollars to develop a reserve and years and dollars to perfect and apply a process, but the work of the pioneer has blazed the way and the rewards serve as a safeguard to the nation.

"Congratulations are to be extended to those manganese operators of the United States, who had the vision and foresight to proceed with the development of the high-grade ore deposits, and for the improvements which have been brought forward in the beneficiation of our low-grade ores; but there is still a wide field of opportunity for further improvements in the development of our low-grade ore reserves.

"May I speak personally to the steel companies of America: We ask your sincere co-operation in the development of that material which serves as the blood cleanser of your industry. And again may I speak personally to the railroads of the country: We ask that you make a survey of the manganese resources which may exist along your lines and that you give encouragement to the individual operators in the way of assisting them in the establishment of freight rates under which they may be able to operate, so that you may share in the $5,000,000 per year revenue in freight which would result from the development of the domestic manganese industry."

Study of Aircraft Market to Reward Steelmakers

(*Concluded from Page* 630)

concentrated in a single range of stock —a material that will meet the properties of the two steels he formerly carried.

Unfortunately, in the application of steel development to aeronautical use the aircraft industry does not have the intimate contact it has with the aluminum alloy industry with its concentration in the hands of practically two firms. The relatively small volume of raw material used in the past probably did not warrant too special consideration from the steel industry as a whole, although individual concerns always gave the fullest cooperation possible. The present result is that while we have constant development of a generally accepted basic specification in the light alloy field, we have many variations of alloy steels available, all being freely offered as a substitute, one for the other, when bids are invited. Perhaps each one of these analyses does possess some particular advantage as claimed by the steel manufacturers or aeronautical engineers who originated them, but it would be a distinct advantage if agreement could be reached on a single basis analysis, and development proceed from that as a basis. The increasing output of airplanes and the remarkable future of the aeronautical industry would warrant special consideration from the steel industry. Among the many variations of alloys now offered, there must be one that best represents current development, on which agreement could be reached. When this is done, steel mills can freely manufacture in production runs; jobbers can stock the material in aeronautical sizes and the airplane manufacturer can develop his shop technic with every assurance that it will apply to all alloy steel, whatever the source of purchase.

In the aeronautical engine field, the impetus for standardization must still come initially from the aeronautical industry itself. The problem here is vastly more complex but an ultimate agreement on perhaps a few basic analyses is not unreasonable. In structural steel requirements, however, the time is ripe for the co-operation of the steel industry. The success of this co-operation will do much to foster similar co-operation in the aeronautical engine field.

The employment of stainless steel and stainless iron for aeronautical use still is in the experimental stage. Here, the aeronautical industry is handicapped in its development by the general use of trade names for marketing the product of the different individual steel manufacturers. Co-operative research to develop an analysis particularly adapted to aeronautical work would do much to clarify the situation. While in this case, the demand volume is not yet great, the potential market is there, if the steel industry chooses to develop it.

Today aeronautics is admittedly a highly specialized field—but so is steelmaking. Intimate concentrated contact between the two industries as a whole, cannot help but reflect favorably on the activities of both. The situation, at least in the structural material field, is ripe for improvement and development. A special study of aeronautical uses and needs would be of distinct benefit to the steel industry as a whole.

Men of Industry

(*Concluded from Page* 670)

wide experience in the iron and steel industry. He has written many technical articles on the practical phases of iron and steel and is the author of "Practical Features of Pickling," which appeared in IRON TRADE REVIEW recently.

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Benedict Crowell, Cleveland, assistant secretary of war and director of munitions during the World war, has been re-elected president of the Army Ordnance association.

* * *

A. D. O'Brien, manager of the Standard Tin Plate Co. mill, Cannonsburg, Pa., has resigned, and is expected to retire from active business. He has returned recently from an European tour.

* * *

Walter R. Howell, who has been vice president and general manager of Bliss & Laughlin Inc., Harvey, Ill., manufacturer of cold finished steel bars and shafting, will be in charge of the new plant which will be erected by this interest at Buffalo.

* * *

Thomas F. McKean, manager of the Portland, Me., office of the Otis Elevator Co., has been transferred from that office and assigned as assistant service manager of the Boston zone, which comprises all of New England, with headquarters in Boston.

* * *

Grant Thorn, who recently resigned as sales manager of the American Cyanamid Co., has become associated with the subsidiaries of the International Combustion Engineering Corp., New York, which are identified with the coal tar products and allied chemical fields.

* * *

August Wilks, for the past five years production manager of the Hoover Vacuum Sweeper Co., Canton, O., has become associated with the Kearney & Trecker Corp., Milwaukee, as works manager.

C. M. Cheadle Jr., formerly advertising manager of Barber-Coleman Co., Rockford, Ill., has become advertising manager for Kearney & Trecker.

Obituaries

JOSEPH L. CALLAHAN, 56, formerly vice president of the Durango Steel Co., Mexico, died Sept. 8 at his home in New York. Mr. Callahan was born at Callahan Corners, N. Y., and was graduated from Cornell university in 1898. He spent eight years in Des Moines, Iowa, before going to Mexico for 12 years. He was a director of the National Postage Stamp Machine Corp.

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George F. Simpson, for many years president of the J. F. & G. F. Simpson Iron Foundry, Brooklyn, N. Y., died Aug. 29, aged 78, in Allenhurst, N. J.

* * *

William H. Yawger, 64, vice president and treasurer of the Weston Electrical Instrument Co., Newark, N. J., died in Crawford, N. J., Sept. 4. Mr. Yawger had been an executive of the Weston company for 35 years.

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Nelson J. Teeter, 91, from 1864 to 1912 connected with the Grout foundry at Grimsby, Ont., died Aug. 31, at Grimsby. He was superintendent of the foundry when he retired 16 years ago.

* * *

William H. Genske, 60, secretary of the Lakeside Bridge & Steel Co., North Milwaukee, Wis., died at his home in Milwaukee, Aug. 31. He was born in Waukesha county, Wis., and was associated with the Lakeside company virtually from its inception.

* * *

Ralph H. Warren, 57, mechanical engineer in New York, died in that city, Sept. 3. He was a graduate of Princeton university, Princeton, N. J., and for a number of years practised his profession in Bethlehem and Easton, Pa. He went to New York in 1924. Mr. Warren was a member of the American Society of Mechanical Engineers.

Machine Exports Near Record

Strictly Industrial Equipment Shipments for Seven Months Best Since 1921—Lathes and Milling Machinery Lead in Metalworking Class, Gaining 132 Per Cent—Construction and Conveying Machinery Gain 31 Per Cent

UNITED STATES shipments abroad of strictly industrial machinery during the seven months ending July, 1928, reached a total value of $120,700,000 and surpassed the trade of any corresponding period since 1921, states the industrial machinery division, bureau of foreign and domestic commerce. Indeed, if the present export activity is maintained during the remainder of the year, the volume for 1928 will equal that of 1921, the last year of the postwar expansion period. Shipments during July were 12 per cent in excess of the corresponding month in 1927 and slightly greater than during June of 1928. The trade of the seven months' period surpassed that of 1927 by approximately $14,200,000, or 15 per cent.

The accompanying table compares the export trade in industrial machinery for corresponding months and seven months' period of 1927 and 1928.

The marked activity manifested during recent months in exportation of construction and conveying machinery and metal working machinery has continued through July, with the results that shipments of the former are now nearly 31 per cent in advance of the seven month period of 1927, and trade in the latter group has gained by nearly 38 per cent. In the first group, construction machinery exports totaled $8,802,000, compared with $6,486,000 for the 1927 period, an increase of 36 per cent. Conveying machinery in this group accounted for exports of $5,517,000, compared with $4,890,000 for the seven months of 1927, a gain of 25 per cent. Shipments of excavators, including power shovels, reached a total of $3,987,000 for the seven months of 1928, against only $2,413,000 for the corresponding 1927 period. The trade in cranes has made unusual strides, reaching a total of $1,928,000, compared with $832,000 for the seven months of 1927, and representing a gain of 132 per cent.

The trade increases in the metal working machinery group were shared by most of the types in this class. Perhaps the most noteworthy gain, however, was in lathes and milling machinery, the former accounting for a trade valued at $2,590,000, compared with $1,663,000 in 1927, and the latter for $1,470,000 or more than double the 1927 trade.

Exports of mining and quarrying machinery have continued on the same level as 1927, but the trade in oil well and oil refining machinery has shown a pronounced decline, as indicated in the accompanying table. The trade in miscellaneous machinery continued to gain, the increases being distributed over a wide range of items.

United States Exports of Industrial Machinery

Class	July 1927	July 1928	7 months ended in July 1927	7 months ended in July 1928
Power-generating, except electric and automotive:				
Steam engines (1)	690,119	680,576	5,703,274	4,403,523
Internal-combustion engines (2)	807,571	846,205	5,145,073	5,352,962
Water wheels and water turbines	7,123	101,180	150,556	560,525
	1,504,613	1,627,961	10,998,903	10,517,010
Construction and conveying machinery	1,970,412	2,146,891	10,804,319	14,315,914
Mining, oil-well, and pumping machinery:				
Mining and quarrying	1,305,718	1,119,805	8,099,126	8,033,010
Oil-well and oil-refining	1,671,405	1,567,066	11,623,721	8,406,192
Pumping, power (3)	658,448	471,557	3,279,702	2,895,879
	3,635,651	3,178,528	23,002,549	19,336,081
Metal-working machinery:				
Power-driven	1,780,313	2,562,201	10,509,046	14,711,723
Other	425,085	565,100	2,744,966	3,535,575
	2,205,598	3,127,301	13,254,012	18,247,298
Textile, sewing, and shoe machinery:				
Textile	1,068,527	1,094,143	6,257,953	7,924,198
Sewing, industrial	396,515	392,322	2,400,190	2,649,399
Shoe, except sewing	193,434	106,875	961,711	1,053,416
	1,657,476	1,595,340	9,699,854	11,627,013
Other industrial machinery (4)	6,138,263	7,519,135	38,728,356	46,916,783
TOTAL	17,120,013	19,193,156	106,567,993	120,762,099

(1) Excludes locomotives
(2) Excludes engines not over 10 horsepower
(3) Excludes windmill pumps; also parts of pumps
(4) Excludes domestic washing machines; includes mine cars

Italy Cuts Machinery Imports Sharply

Italy's imports of machinery declined abruptly during 1927 compared with 1926 and 1925, according to complete trade returns now available, Assistant Commercial Attache A. A. Osborne, Rome, reports to the department of commerce.

Decline has gone on steadily since the third quarter of 1926, and has affected trade with all countries. Germany, which during the past three years has supplied approximately half of the machinery imported into Italy, suffered a decrease of 41 per cent compared with 1926, and 36 per cent compared with 1925.

The United States, which supplies only 8 per cent of the tonnage and 12 per cent of the value, lost 36 per cent in tonnage and more than 41 per cent in value compared with 1926, and 17 per cent in tonnage and 37 per cent in value compared with 1925.

The total tonnage of machine tools imported into Italy during 1927 represented only 53 per cent of the imports of 1926 and 40 per cent of the trade of 1925.

Canada Best Customer

During the year ended July 1, 1928, Canada for the first time replaced the United Kingdom as the principal destination for American exports, according to an analysis by Lawrence B. Mann, of the department of commerce. During this year our exports to Canada increased by $74,000,000. Exports to nearly all other countries decreased during this same period, exceptions being Central and North America and Africa. Exports to Europe as a whole decreased about 3 per cent.

News of Societies

GREATER attention than ever before is to be given to the airplane industry at the annual convention and exposition of the American Society for Steel Treating at Philadelphia during National Metal week, Oct. 8-12. An important discussion will be on the development of duralumin, a material used considerably in the construction of all-metal planes. Attention will be given also to the design of feed and oil pipes, the breaking of which has resulted in many air disasters. Use of the X-ray to detect flaws in metals and demonstrations of welding and riveting methods are other features which will interest air-minded visitors. An aircraft display including engines and other metal equipment for airplanes is being arranged in connection with the metal exposition in Commercial museum.

* * *

Refractories Institute Meets

The fall meeting of the American Refractories institute will be held in William Penn hotel, Pittsburgh, Oct. 24, and will be devoted to the discussion of specifications and a continuation of the specifications symposium held during the spring meeting at White Sulphur Springs.

* * *

Measuring Devices Exhibited

A meeting which promises to be valuable and interesting will be held in the Engineering Societies building, New York, on the evening of Wednesday, Oct. 17, under the joint auspices of the Museums of the Peaceful Arts and the machine shop division of the American Society of Mechanical Engineers, on the subject of measurement. Dr. George K. Burgess, director of the bureau of standards, Washington, has promised to preside, and two papers will be given, the first, entitled "Measuring Devices, Primarily Manual," by Prof. James A. Hall, of Brown university, Providence, R. I.; and the second, "Development of Automatic Measuring Devices and Use of Optical Methods," by Prof. Earle Buckingham, of the Massachusetts Institute of Technology, Cambridge, Mass. An active discussion will follow, after which the meeting will adjourn to the Museums of the Peaceful Arts to inspect a loan exhibit of measuring devices, under auspices of Pratt & Whitney Co., Brown & Sharpe Mfg. Co., Bausch & Lomb Optical Co., John Bath & Co., Jones & Lamson Machine Co., the bureau of standards, and others. This collection of measuring instruments will be on exhibition at the museum for one month.

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Meetings of Mining Engineers

At the recent convention of the geophysical division of the American Institute of Mining and Metallurgical Engineers at Boston, the trip to Nova Scotia which was to have followed immediately afterward, was cancelled, and the papers which were to have been presented on this trip were presented at Boston. These included discussion of the mineral resources of Nova Scotia and the Wabana iron ore deposits of Newfoundland. On September 7 and 8 the first meeting since 1911 of the Lake Superior institute on the Menominee range was held at Iron Mountain and Crystal Falls, Michigan. The southern California section is now holding a joint session with the western division of the American Mining conference. During the week of Oct. 8-12 the institute of metals division will hold its fall meeting at Philadelphia. In October, 1929, a general meeting of the entire institute will be held in Los Angeles and San Francisco. This will be coincident with the arrival in California of a large group of engineers who will sail to attend the World Engineering congress in Japan.

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World Engineering Congress

The American committee of the World Engineering congress has announced the tentative general program for the congress to be held in Tokio, Japan, Oct. 30-Nov. 20, 1929. The following is the tentative list of meetings, excursions and inspection trips with the dates on which they are to take place:

Oct. 25-28. Excursions to Nikko and Hakone.
Oct. 29. Opening general session.
Oct. 30-Nov. 1. Sectional meetings.
Nov. 2. Inspection tours to "Reconstruction Works" in Tokio and Yokohama.
Nov. 3. Excursions to Kamakura and vicinity.
Nov. 4-6. Sectional meetings.
Nov. 7. Closing general session.
Nov. 8-9. Sightseeing and inspection tours around Tokio.
Nov. 10. Free day. Leave for Nagoya in evening.
Nov. 11. Arrive at Nagoya in morning. Sightseeing and inspection tours around Nagoya. Leave for Kyoto in evening.
Nov. 12-14. Arrive at Kyoto. Sightseeing and inspection tours around Kyoto and Nara districts.
Nov. 15. To Osaka and back to Kyoto. Sightseeing and inspection tours around Osaka.
Nov. 16. To Kobe and leave Kobe at night. Sightseeing and inspection tours around Kobe.
Nov. 17-18. Sightseeing trip to the Inland Sea and the Miajima temple, one of the "three great sights" of Japan.
Nov. 19. Arrive at Moji in morning.
Nov. 19-22. Sightseeing and inspection tours of dockyards, steelworks, collieries and hot springs in the Kyushu districts.

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Associated Industries to Convene

The thirteenth annual meeting of the associated industries of Massachusetts will be held at the Copley-Plaza and Brunswick hotels, Boston, Oct. 17-18. In connection with this meeting will be an exposition of products manufactured in Massachusetts.

Convention Calendar

Sept. 5-22—Fourth Machine Tool and Engineering exhibition. To be held at Olympia, London, England.

Sept. 17-20—American Society of Mechanical Engineers. Second national fuels meeting at Cleveland hotel, Cleveland. William G. Christy, 511 Locust street, St. Louis, is secretary.

Sept. 20-21—American Electrochemical society. Fall meeting at Kanawha hotel, Charleston, W. Va. Dr. Colin G. Fink, Columbia university, New York, is secretary.

Sept. 24-27—American Society of Mechanical Engineers. National machine shop practice meeting at Cincinnati. Carlos de Zafra, 29 West Thirty-ninth street, New York, is secretary.

Sept. 24-Oct. 3—Iron and Steel institute (British). Autumn meeting in Bilbao, Spain. G. C. Lloyd, 28, Victoria street, London, S. W. 1, is secretary.

Oct. 1-3—Concrete Reinforcing Steel institute. Semiannual meeting at Buckwood Inn., Shawnee-on-Delaware, Pa. M. A. Beeman, Tribune Tower, Chicago, is secretary.

Oct. 1-5—National Safety council. Seventeenth annual safety congress in New York. W. H. Cameron, 108 East Ohio street, Chicago, is managing director.

Oct. 8-12—American Society for Steel Treating. Tenth annual convention at Benjamin Franklin hotel and National Metal exposition at Commercial Museum, Philadelphia. W. H. Eisenman, 7016 Euclid avenue, Cleveland, is secretary.

Oct. 8-12—American Welding society. Annual fall meeting at Bellevue-Stratford hotel, Philadelphia. Miss M. M. Kelly, 33 West Thirty-ninth street, New York, is secretary.

Oct. 8-12—American Institute of Mining and Metallurgical Engineers. Meeting of institute of metals division at Benjamin Franklin hotel, Philadelphia. W. M. Corse, 810 Eighteenth street, Washington, is secretary.

Oct. 11-13—American Gear Manufacturers association. Semiannual meeting at Hotel Statler, Buffalo. T. W. Owen, 3608 Euclid avenue, Cleveland, is secretary.

Oct. 15-18—National Hardware Association of the United States. Thirty-fourth annual convention at Marlborough-Blenheim, Atlantic City, N. J. George A. Fernley, 505 Arch street, Philadelphia, is secretary.

Oct. 17-19—Society of Industrial Engineers. Fifteenth natinoal convention at Hotel Seneca, Rochester, N. Y. George C. Dent, 205 West Wacker drive, Chicago, is secretary.

Oct. 24—American Refractories institute. Fall meeting at William Penn hotel, Pittsburgh. Dorothy A. Texter, 2202 Oliver building, Pittsburgh, is secretary.

Oct. 26—American Iron and Steel institute. Fall meeting at Hotel Commodore, New York. E. A. S. Clarke, 75 West street, New York, is secretary.

Machinery

Extensive and Diversified Buying Is Holding Activity at a High Rate—Busy Fall Is Anticipated—Prices Holding Steady

THE machinery business continues to move at a rapid pace, largely because of widespread buying and the participation of all lines of industry. The chief buyers include automotive manufacturers, airplane builders, farm equipment interests, railroads, textiles, and general manufacturing. Introduction of new models is producing good orders from the automotive field. Railroads have not been heavy purchasers during the summer, but numerous inquiries are now coming to light, particularly in the Chicago district. One carrier has just brought out a list calling for 18 items. The principal buying in textile machinery is from the south. Machine tool manufacturing plants are operating well up to capacity, some on overtime schedules.

New York, Sept. 11.—A good, miscellaneous demand continues for machine tools. While there are few outstanding lists, orders for one and two machines are fairly numerous, with inquiry promising. Sellers generally express satisfaction over business in recent weeks. One large seller enjoyed the best August business in several years. Prices, meanwhile, are unchanged. Crane buying in this district continues slack, although sellers are encouraged over an improvement in inquiry. Among recent orders booked by the Pratt & Whitney Co. are two 13 x 48-inch lathes, one 13 x 30-inch lathe, two used 14 x 10-foot lathes, one 7 x 32-inch bench lathe, one 6-spindle drill, three jig borers, one 6-inch vertical shaper, one 30-inch vertical profiler and one 5-inch production hand miller. Niles Tool Works has closed on 48-inch car wheel borer and a 60 x 41½-foot lathe. Niles-Bement-Pond Co. has booked orders for two high-speed tappers, one 18 x 20 foot gap lathe, one 24-inch drill and one 20-inch drill, two 3-foot radial drills and one 4-foot radial drill.

Worcester, Mass., Sept. 11.—Machine tool buying shows a gradual gain and most plants have resumed operations at higher schedules. Several pending inquiries on small groups of production tools were closed this week and the increase in the volume of individual sales is noted. The demand for tools is well spread, although the larger volume is on production and automatic units. One firm sold a planer, borer and several lathes to a metal plant, while another closed on a turret lathe and several production lathes. Automobile manufacturers are taking machines in surprising volume from one or two interests. It is noted that constant development in new models in this field is creating a more steady demand for tools. Grinding machinery continues to move well. Machine shop trade is fair and foundry melt and part makers are several points higher. Textiles show a slow, but gradual gain, especially in the demand from southern points. Small tools are moving satisfactorily. The used tool market is also more active, but often at off-color prices.

Pittsburgh, Sept. 11.—Further expansion in inquires for machine tools is noted in this district. Awards, however, generally are restricted, holding to about the August level. Last month was a fairly good period for most sellers. Some better buying of tools by the steel industry is expected in certain directions. Westinghouse Electric & Mfg. Co. is looked to to furnish a fairly substantial volume of business. Additional inquiries are appearing for cranes, but this has not been matched by the number of awards. The large list pending at present appears to indicate good activity during ensuing months.

Chicago, Sept. 11.—Machine tool inquiry from western railroads is showing a decided pick-up, despite a slight lull from last month in fresh industrial lists. Chicago, Burlington & Quincy has put out an inquiry for three 36-inch shapers, and Chicago, Milwaukee, St. Paul & Pacific has just issued a list of 18 items, bids for which are to be in Sept. 15. This list includes a 3½-inch turret lathe, a 20-inch brass lathe, a 3½-inch semi-automatic turret lathe, a 30 x 18 lathe, a 42-inch lathe, two 32-inch shapers, two internal grinders, two 20-inch drills, a 3-foot radial drill, combination punch and shear, a 42 x 42 x 16 planer, two electric rivet heaters, a 3½-inch screw machine, a 72-inch boring mill, and a 4½-inch horizontal boring machine. Chicago & North Western is inquiring for a 75-ton bushing press, and Rock Island is asking bids on several items in addition to the three shapers and a number of other tools which have been on inquiry for some time. Great Northern purchased a 36-inch shaper during the week, and the A. O. Smith Corp., Milwaukee, is closing on its list of tools. An airplane shop in Oklahoma closed in Chicago on three lathes, a shaper, three milling machines and a drill. Alemite Mfg. Co., Chicago, purchased several punch presses. Shipments are expected to be unusually heavy this month, as a number of dealers are carrying over heavier stocks from the preceding month than at any time this year.

Cleveland, Sept. 11.—Dealers and manufacturers alike are well satisfied with the present status of the machine tool and equipment market in this territory. The automotive industry is the heaviest buyer for all types of machinery. New models by most manufacturers and the rate of car movement is having much to do with present activity. Ford Motor Co. is purchasing in good volume, presumably for rounding out the production lines for Model A. General Motors Corp. also is a consistent buyer, some of the tools being of expensive types. Dealers are taking a good volume of general business. These orders are small, but are coming from all industries. Many of the orders are made spot and immediate delivery is specified. Prices are holding well with buyers not disposed to bargain for lower figures.

CRANE ORDERS PLACED

Eight electric overhead crane for De La Vergne Machine Co., subsidiary of Cramp-Norris Industrials Inc., Philadelphia; to Niles Crane Corp. This award, previously noted as involving six cranes, included one 40-ton with 5-ton auxiliary, one 20-ton with 5-ton auxiliary, one 15-ton, three 10-ton and two 5-ton.

Four cranes, including three 7½-ton crawler cranes and one 7½-ton stationary crane for mounting on a barge, for Asiatic Petroleum Corp. of New York Ltd., New York; to Industrial Brown Hoist Corp.

Two crawler cranes for Standard Oil Co. of New York, for export; reported placed.

One 5-ton truck crane for Rosenthal Engineering Contracting Co., New York; to Browning Crane Corp. This is the second to have been placed recently.

One 5-ton electric overhead crane for Washburn Wire Co., New York; to Shaw Crane-Putnam Machine Co.

Among cranes sold recently by the H. D. Conkey & Co., Mendota, Ill., are the following: Two 5-ton hand-geared underhung cranes for New Haven Copper Co., Seymour, Conn.; two 2-ton hand-geared underhung cranes for International Paper Co., Corinth, N. Y.; one 2-ton single I-beam electric crane for Republic Iron & Steel Co., Warren, O.; one 8-ton single I-beam hand-geared crane for Dow Chemical Co., Midland, Mich.; one 1-ton side-braced electric for Truscon Steel Co., Youngstown, O.; one triple truck underhung electric crane for Phoenix Horse Shoe Co., Joliet, Ill.; one 5-ton double-girder 2-motor crane for Fisher Body Corp., Pontiac, Mich.; one ½-ton underhung motor-driven electric crane for Hunt-Spiller Mfg. Co., South Boston, Mass.; one 1-ton special underhung single I-beam motor-driven crane for Ashtabula Corrugated Box Co., Ashtabula, O.; one 1-ton hand-geared underhung crane for Pittsburgh Valve Foundry & Construction Co., Pittsburgh; one 3-ton underhung transfer crane for Robert Gaylord Inc., St. Louis.

CRANE ORDERS PENDING

10-ton crawler crane for Borough of Richmond, New York; bids asked.

Ready To Light Stack

Birmingham, Ala., Sept. 11.—Gulf States Steel Co. is completing its program of development started more than 16 months ago. The rebuilt blast furnace will be lighted Sept. 15. The rod mill is in operation now and within another 60 days the new power plant will have been completed. Electric-driven methods have replaced steam power throughout the works.

CONSTRUCTION and ENTERPRISE

Concise Timely Business Building Opportunities from Field of Industry

North Atlantic

HARTFORD, CONN.—M. S. Little Mfg. Co., 151 New Park avenue, has awarded the general contract for the construction of a 1-story brass foundry, 50 x 120 feet. (Noted Aug. 23.)

NEW HAVEN, CONN.—H. T. McCluskey & Sons Inc., Grand avenue, plans to build a 1-story plant addition, 42 x 60 feet, for the manufacture of its line of wire cloth.

WATERFORD, CONN.—Connecticut Power Co., 33 Union street, New London, plans to build a 3-story service building, 75 x 210 feet, here. L. H. Goddard, 85 State street, New London, is architect.

WASHINGTON—A. L. Flint, general purchasing officer of the Panama Canal, is inquiring for portable pneumatic grinder, band saws, dies, air compressor, etc.

WASHINGTON—International Harvester Co., 606 South Michigan avenue, Chicago, has awarded the general contract for a truck manufacturing plant, service and repair works on Bladensburg road east, here.

BALTIMORE—Tidewater Air Lines Inc., Herbert Lindemyer president, 1306 Lexington building, contemplates the erection of an airplane hangar.

EASTON, MD.—Manual training equipment will be installed in a new 3-story high school to be built here.

ARLINGTON, MASS.—Dalton Motors Inc. has been incorporated with $50,000 capital to manufacture and deal in motors, parts, appliances, etc., by Francis L. Dalton, Arlington.

BOSTON—Scott & Williams Co. of Brazil has been incorporated with $20,000 capital to manufacture, import and export knitting machinery, tools, parts, etc., by Francis H. Cummings, 1 Federal street, Boston.

BOSTON—J. E. Barbour-Allentown Corp. has been incorporated with 10,000 shares no par value stock to manufacture machinery and wooden and metal articles, by Charles S. Colby, 80 Federal street.

BOSTON—United Equipment Corp. has been incorporated with $50,000 capital to manufacture all kinds of road machinery, builders' machinery, etc., by John D. Coleman, 53 Orchard street, Jamaica Plain, Mass.

BOSTON—Beacon Battery Supply Co. has been incorporated with 1000 shares no par value stock to manufacture batteries, battery equipment, electrical fixtures, etc., by Mark W. Gorham, 1100 Boylston street.

BOSTON—Ballard Boiler Corp. has been incorporated with 1000 shares no par value stock to manufacture and deal in all kinds of boilers by Robert J. Holmes, 3 Lakeview road, Winchester, Mass.

BOSTON—Han-A-Phone Co. of New England Inc. has been incorporated with $100,000 capital to manufacture moving picture machines, talking machines, etc., by David H. Brand, 111 Homestead street, Boston.

BROCKTON, MASS.—Herbert M. Willis Inc. has been incorporated with $100,000 capital to manufacture motors of all kinds, parts and appliances, by Herbert M. Willis, 128 Morse avenue, Brockton.

CAMBRIDGE, MASS.—Massachusetts Institute of Technology, Massachusetts avenue, has plans for a 1-story engine testing laboratory and shop, 85 x 155 feet. Coolidge & Carlson, 89 State street, Boston, are architects.

CHARLEMONT, MASS.—Charlemont Electric Light & Power Co. plans extensions and improvements in its power plant and transmission system.

MATTAPAN, MASS.—Thompson Wire Co., Mildred avenue, has awarded the general contract for a 1-story plant addition, 55 x 125 feet, to Clark & Smith Inc., 13 Temple street, Quincy, Mass.

PITTSFIELD, MASS.—City council has completed plans to establish a municipal airport, to include hangars, repair and reconditioning shops, and other mechanical buildings.

SPRINGFIELD, MASS.—Construction has started on a new steel and concrete building, 80 x 200 feet, by John C. Robinson, Connecticut Valley Realty Co., to be occupied on a long term lease by the International Harvester Co., motor truck division.

WORCESTER, MASS.—Taylor-Hall Welding Corp., Worcester, Mass., has purchased the plant of the Worcester Textile Co. and about 20,000 square feet of land, and is moving into the larger quarters, to occupy about 13,000 square feet.

ASBURY PARK, N. J.—City council has started work on its municipal steam power plant for which Whitney Warren, 16 East Forty-seventh street, is architect.

CAMDEN, N. J.—Victor Metal Aircraft Corp. has been incorporated with 30,000 shares no par value stock to manufacture aircraft, by New Jersey Corporation Guarantee & Trust Co., Camden.

CLOSTER, N. J.—Rockland Electric Co. has plans for extensions and improvements in its power plant and system.

ELIZABETH, N. J.—Viehweger Lock Co. has been incorporated with $250,000 in preferred shares and 20,500 shares no par value stock to manufacture locks, by Connolly & Hueston, Elizabeth, attorneys.

HOBOKEN, N. J.—Projecting Appliances Corp. has been incorporated with 1500 shares no par value stock to manufacture machinery, motors, etc., by George A. Enright, New York, attorney.

KEARNY, N. J.—Western Electric Co., 195 Broadway, New York, has awarded the contract for a 2-story plant to Austin Co., 120 Broadway, New York. (Noted Sept. 6.)

LYNDHURST, N. J.—Board of education,

Resale Equipment News

SURPLUS and surveyed material will be sold at public auction, Oct. 11, by the navy department at the Norfolk navy yard, Norfolk, Va. The sale includes 500 tons of ferrous metals, 150,000 pounds of nonferrous metals, 290,000 pounds of battery scrap, machine tools, laundry machines, trucks, airplane parts, engines, electrical material, generating sets, pumps, boilers and gages.

Sales Calender

Sept. 18—*Auction sale surplus and surveyed naval material at Philadelphia navy yard.*

Sept. 18—*Sale by sealed bids of scrap metals at Fort Hancock, N. J.*

Oct. 11.—*Auction of navy surplus and surveyed material at Norfolk, Va., navy yard.*

Elite Mfg. Co., Ashland, O., has bought the plant of the Niagara Mfg. Co., Lucas, O., through bankruptcy proceedings and will continue its operation. The plant has been producing wrenches, which have been sold by the Elite Mfg. Co.

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Midwest Stamping Co., Kellogg, Iowa, has bought at sheriff's sale the offices and buildings formerly owned by the Gould Balance Valve Co., including two large shops, four office rooms, a vault room and warehouse. Considerable machinery was also included. The buying company will move its operations there at once. The company manufactures small metal novelties, including metal tips for lead pencils, light sockets for automobiles, and parts for motors and machinery. A. C. Holmdahl is president, J. M. Gilreath vice president, and C. E. Holdmdahl secretary and treasurer.

Town hall, plans to build a 2-story addition to its high school, to include a manual training shop, etc.

BROOKLYN, N. Y.—Practical Wire Works has been incorporated with $5000 capital by A. Casper, 1528 Pitkin avenue, attorney.

BUFFALO—Bingham & Taylor Corp. has been incorporated and will take over the foundry of the W. P. Taylor Co., continuing to operate it under the same program.

BUFFALO—Curtiss Aeroplane & Motor Co. will start erection of its new plant immediately following the clearing of several parcels of land, and the letting of contracts. C. Roy Keys is vice president of the company. The plant is expected to be in operation next spring, manufacturing airplanes and motors. (Noted Aug. 30).

JAMESTOWN, N. Y.—Viking Metallic Products Corp., E. Johnson, Windsor and Scott streets, president, contemplates construction of a plant addition.

NEW YORK—Micro Tool Co. has been incorporated with $5000 capital by L. A. Piccolo & Satriano, Spring and Lafayette streets, attorneys.

NEW YORK—Shapiro Machine & Motor Co. has been incorporated with $20,000 capital to manufacture and deal in sewing machines, etc., by E. I. Herbst, 220 Broadway, attorney.

ALLENTOWN, PA.—Traylor Engineering & Mfg. Co. plans to install power equipment in its new plant addition for manufacturing mining machinery. (Noted Aug. 23.)

BETHLEHEM, PA.—Lehigh university is inquiring for a 10-ton overhead electric crane, 18-foot span, for its laboratory.

ERIE, PA.—Manual training equipment will be installed in the new senior high school to be built here. Meyers & Johnson, Commercial building, are architects.

FOUNTAIN HILL, PA.—Bethlehem Mfg. Co. has been incorporated with $10,000 capital to manufacture metal and wood products, including castings, tools, implements, etc., by William A. Buss, 1218 Broadway, Fountain Hill.

MT. CARMEL, PA.—Ornamental Iron Works of Mt. Carmel Inc. has been incorporated with $20,000 capital to manufacture and deal in ornamental and architectural iron, steel, bronze, etc., by Robert J. Best, Mt. Carmel.

OIL CITY, PA.—Oil City Tank Car Co. has been incorporated with $50,000 capital to manufacture and deal in metal products, repair of tank cars, general refinery equipment, etc., by B. H. Mathias, Oil City.

Canada

VANCOUVER, B. C.—Murray-Latta Machine Works has awarded contract to the Dominion Construction Co. Ltd., 509 Richards street, for construction of a machine shop and boiler house, to be 1-story, 50 x 122 feet, concrete foundation, reinforced concrete construction. Architect is S. A. Lake, 509 Richards street.

MOUNT DENNIS, ONT.—Firstbrook Boxes Ltd., 283 King street east, Toronto, Ont., has awarded contract to James A. Wickett Ltd., 16 Saulter street, Toronto, for the erection of a box manufacturing plant here to include a power house and shavings bin, 46 x 71 feet, reinforced concrete construction. Architects are Chapman & Oxley, Northern Ontario building, Toronto.

NORTH BAY, ONT.—Representatives of General Steel Wares Ltd., Toronto, Ont., have completed arrangements and secured a site here for the erection of a branch plant to consist of assembly plant, distributing warehouse, etc.

OTTAWA, ONT.—Laurentian Motors Ltd. has been incorporated to manufacture and deal in automobiles, motor cars, trucks, and tractors, with $40,000 capital, by Rally E. Horner, Noble L. Horner, and Cecil F. Garvan.

OTTAWA, ONT.—Beach Foundry Ltd. will make a public offering of 7 per cent cumulative preferred stock, the funds from which will be for plant improvement and to finance its increasing business. The company manufactures stoves, ranges, heaters, furnaces, etc.

TORONTO, ONT.—Aluminum Ltd. has been incorporated to manufacture and deal in aluminum and aluminum products, with $50,000 capital, by Howard A. Harrison, William J. Beatty, and John F. Van-Lane.

TORONTO, ONT.—Link-Belt Ltd., 791 Eastern avenue, has awarded the following contracts in connection with the erection of a machine shop here: General contract, Jackson-Lewis Construction Co.; steel, McGregor & McIntyre Structural Steel Ltd., 1139 Shaw street. Engineers, Ewart, Armer & Byam, Excelsior Life building, Toronto. Tenders for mechanical trades will be awarded at an early date.

WHEATLEY, ONT.—Town council will call for tenders shortly for the construction of a waterworks plant here. A. W. Connor & Co., 301 Metropolitan building, Toronto, Ont., are engineers. R. N. Epplett is clerk.

WINDSOR, ONT.—Chrysler Corp. contemplates building another addition to its plant at Tecumseh and McDougall streets, where it will turn out the new Plymouth cars.

CAP DE LA MADELEINE, QUE.—Private bids are being received (no closing date set) by the Bates Valve Bag Co., manufacturer of automatic bag filling and weighing machinery, for erection of a plant here. Building to be 1-story, 80 x 200 feet, brick construction.

HULL, QUE.—Canada Cement Co., Canada Cement building, Montreal, Que., proposes to make extensive alterations and additions to its plant here. Machinery will be installed.

MONTREAL, QUE.—Serv-All Co. Ltd. has been incorporated to manufacture and deal in refrigerators, etc., with a capital stock of 8000 shares no par value stock by Joseph A. Marion, Neopol Charbonneau, and Paul Lebel.

MONTREAL, QUE.—Central Public Service Corp. Ltd. has been incorporated to manufacture and deal in electricity, with 100,000 shares of no par value stock, by James D. P. Lewin, Arthur N. Carter and Thomas A. McAvity.

MONTREAL, QUE.—Bids will be received until Sept. 28 by J. Etienne Gauthier, city clerk, for construction of waterworks pumping plant and appurtenances on Carleton road; also for repairs to reservoir and pipe connections. Plans, specifications, etc., at office of Montreal water board, 3161 Joseph street, Verdun.

PRINCE ALBERT, SASK.—City council has awarded contract to E. Leonard & Sons Ltd., London, Ont., for power house equipment consisting of a water tube boiler, automatic stokers, steel stack, fans and pump. J. A. Foerster is electrical superintendent.

East Central

CANTON, ILL.—International Harvester Co. has awarded the general contract for additions to its grinding building, steel storage and steel shearing departments to H. K. Ferguson Co., Cleveland. The steel storage building is to be 1-story, to house large machinery. H. W. Bland is plant engineer.

CHICAGO—Williams Freese Corp., 2501 Homer street, has been incorporated with $10,000 capital to manufacture and conduct a general machinery business, by Henry R. Freese, Martin L. Williams and Lee J. Gary.

CHICAGO—Hayes Malleable Iron Co., 231 South LaSalle street, has been incorporated with 4000 shares no par value stock to manufacture and deal in iron, steel and other metals by Maurice A. Riskind, Leroy Weis and Samuel A. Litman.

CHICAGO—L. C. Smith Bearings Co. has purchased the property at 2633-35 South Michigan avenue and extensions and improvements in the machine shop, tool and equipment departments will take place when the company occupies its new building.

CHICAGO—Miles Engineering Co., 1236 Granville street, has been incorporated as a manufacturing and engineering corporation, for $125,000 preferred stock and 12,500 no-par shares, by Ernest Anderson, John Auberg and Andrew Early.

EAST PEORIA, ILL.—Caterpillar Tractor Co., Washington street, has awarded the general contract for a plant to Austin Co., 510 North Dearborn street, Chicago. Plans are in progress now on a plant addition, 163 x 612 feet. (Noted July 12).

JOLIET, ILL.—Fairgmot Stamping Co., 316 North Scott street, has been incorporated with $1000 capital to manufacture and deal in steel stampings and special steel washers, by A. J. Greif, Thomas Greif and F. J. Magee.

NEW ATHENS, ILL.—Okaw Stove & Enameling Co. plans to build a 1-story plant. Gill & Jackson, 1328½ Walnut street, Murphysboro, Ill., are architects.

PLANO, ILL.—Capital stock of the Plano Foundry Co. has been increased, with the company possibly considering expansion.

ROCKFORD, ILL.—Ray Brown & Co., R. A. Brown, 743 Twentieth street, manager, contemplates the construction of a 1-story machine shop.

ELKHART, IND.—Chicago Hardware Found-

ry Co. plans the construction of a foundry addition to be used for a coreroom.

FORT WAYNE, IND.—Poinsatte Bros., 323 East Washington street, plan to build a 1-story machine shop and service building, 60 x 150 feet. Pohlmeyer & Pohlmeyer, 260 Central building, are architects.

INDIANAPOLIS—A committee has been appointed to recommend a site for the establishment of a municipal airport. F. C. Gardner, of the E. C. Atkins Co., is chairman.

INDIANAPOLIS—A. J. Lauth, 3169 Washington boulevard, plans to build a 1-story machine shop and service building, 154 x 170 feet. Deoppers & Lennox, 226 East Michigan street, are architects.

INDIANAPOLIS—Hoosier Fence & Wire Co. has been incorporated with $50,000 capital to manufacture and deal in wire and iron fence by M. D. and L. D. Rutherford and N. E. Boyer.

INDIANAPOLIS—Diamond Chain & Mfg. Co., 502 Kentucky avenue, L. M. Wainwright president, has awarded the general contract for a 4-story plant addition to Hall Construction Co., Castle Hall building. (Noted Sept. 6.)

INDIANAPOLIS—Ribbon-Miter Machine Co., 1002 Kentucky avenue, has been incorporated with 100 shares no par value stock to manufacture and deal in glass cutting and decorating machines and devices by Park H. James, Harry C. Woodsmall and James E. Bingham.

PLYMOUTH, IND.—Plymouth Metal Working Co. plans the construction of an addition which will increase the plant's capacity.

SOUTH BEND, IND.—Mid City Iron & Metal Co. suffered damage to its plant in a recent fire.

DEARBORN, MICH.—Wings Inc. has been incorporated with 35,000 shares no par stock value to manufacture and deal in airplanes, dirigibles, accessories, etc., by Charles T. Bush, 1107 Three-Mile drive.

DETROIT—Uniphone Corp., 3733 Beaufait avenue, has been incorporated with 1000 shares no par value stock to manufacture musical instruments, etc., by Ralph E. Nadell, 1348 West Grand boulevard.

DETROIT—Knight Screw Products Co. has awarded the general contract for a manufacturing plant addition to Gallagher-Fleming Co. (Noted Sept. 6.)

DETROIT—Oldberg Mfg. Co., 2661 East Grand boulevard, manufacturer of automobile mufflers, etc., plans to build a 1-story plant addition. C. W. Brandt, 211 Woodward avenue, is architect.

FLINT, MICH.—Chevrolet Motor Co., General Motors building, Detroit, is inquiring for machinery and equipment for its proposed 1-story machine shop, 205 x 315 feet, to be built on West Kearsley street.

FLINT, MICH.—Fisher Body Corp. has awarded the general contract for its dye storage building and pattern shop to be built here to J. Utley, Detroit. H. E. Beyster is engineer in charge.

HIGHLAND PARK, MICH.—Chrysler Corp., Massachusetts avenue, has awarded the general contract for a 1-story plant, 80 x 540 feet, to R. H. Hidey, General Motors building, Detroit. (Noted Sept. 6.)

HOLLAND, MICH.—Szekely Air Craft Corp. has been incorporated with 50,000 shares no par value stock to manufacture and deal in aircraft, mechanical devices, etc., by E. H. Sulkers, Holland.

KALAMAZOO, MICH.—L. V. White, Kalamazoo, president of the L. V. White Co., is also president of the Dixie Service Co., recently incorporated for $100,000, to build and operate bulk service gasoline storage and service stations in Michigan.

LANSING, MICH.—Olds Motor Works, Division street, is inquiring for crane and conveyors for its proposed 1-story enameling plant, 40 x 200 feet, to be built here.

PONTIAC, MICH.—Pontiac Pattern & Engineering Co. has awarded the contract for a foundry addition to Pryale Construction Co. Robert O. Derrick is the architect for the project. (Noted Aug. 16.)

ALLIANCE, O.—Transue & Williams Steel Forgings Corp. has awarded the general contract for extensive additions to its plant to H. K. Ferguson Co., Cleveland. The expansion comes as a result of increasing business. F. W. Trabold is president.

CANTON, O.—Timken Roller Bearing Co., Deuber avenue northwest, plans to build a 3-story administration building and chemical laboratory, 40 x 100 feet. R. T. Campbell and R. A. Zenk, 144 West Wood street, Youngstown, O., are architects.

CINCINNATI—Tennessee Copper Corp., Skillman road, has awarded the general contract for a 2-story plant, 208 x 420 feet.

CLEVELAND—Hahn Mfg. Co., 5332 Hamilton avenue, has awarded the general contract for a 1-story machine shop, 38 x 73 feet.

DAYTON, O.—Variety Mfg. Co., 2901 West Third street, has awarded the general contract for a 1-story metal spinning plant to be built on Minerva street.

DAYTON, O.—United States government, controlling the Fairfield air depot here, with Capt. Laughlin in charge, plans to build an airplane machine and repair shop, 1-story.

JEFFERSON, O.—Geneva Metal Wheel Co. is installing new machinery which will take care of increasing business.

NAPOLEON, O.—Napoleon Stamping Co., formerly the Cross Arm & Cable Equipment Co., has increased its capital stock from $50,000 to $200,000 and contemplates the installation of additional machinery to take care of increased orders.

TOLEDO, O.—DeVilbiss Co., manufacturer of spraying equipment and devices, plans to build a new plant addition.

WARREN, O.—The local plant of the General Fire Extinguisher Co. (formerly the Warren Iron & Steel Co.), is understood to be in line for considerable expansion and improvement.

ZANESVILLE, O.—A 1-story foundry and machine shop, 100 x 280 feet is planned by Leubee Bros. Inc. John P. Schooley, Zanesville, is architect for the project.

MILWAUKEE—Seaman Body Corp., H. H. Seaman, 1732 Richards street, president, plans

Where Machinery Exports Went in June

	Lathes			Drills			Gear cutters	Planers and shapers	Milling knee-column	Machines other	Pneumatic portable tools
	Engine	Turret	Other	Vertical	Radial	Other					
Russia	14	11	.....	1	13	12	.....	2	1	2	18
France	8	8	1	15	1	5	22	2	22	6	117
Germany	8	10	1	.....	1	4	4	5	.....	9	48
Italy	.....	.....	.....	1	2	.....	3	3	.....	.....	105
Netherlands	1	.....	.....	.....	.....	1	.....	.....	.....	1	1
Spain	.....	.....	.....	.....	.....	1	.....	.....	2	.....	3
Sweden	5	1	.....	.....	1	.....	.....	.....	1	.....	11
United Kingdom	19	1	5	2	.....	3	8	11	7	16	500
Canada	18	7	32	28	3	33	.....	8	2	6	177
Mexico	.....	1	1	.....	.....	9	.....	.....	.....	.....	27
Cuba	1	.....	.....	.....	.....	1	.....	.....	.....	.....	34
Argentina	1	1	.....	.....	1	.....	.....	1	.....	.....	1
Colombia	2	1	.....	.....	.....	7	.....	1	.....	.....	20
Chile	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	4
Brazil	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	25
Japan, Chosen	1	.....	.....	.....	.....	1	.....	2	5	.....	138
Philippine Islands	3	.....	2	.....	1	.....	.....	1	2	.....	13
Australia	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	76
British South Africa	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	25
Venezuela	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Other countries	4	1	.....	4	1	12	1	7	5	75	269
1928											
June	85	43	42	52	15	89	38	44	47	115	1,614
May	63	60	41	23	10	72	43	24	22	34	1,706
April	39	41	125	62	8	71	30	46	19	43	2,462
March	95	29	33	75	16	80	26	37	33	47	1,928
February	68	30	53	19	13	56	24	36	24	51	.....
January	66	26	57	42	18	42	31	40	30	81	.....
Total, 1927	716	280	444	376	105	862	379	42	270	491	.....

to build a manufacturing plant addition.

RACINE, WIS.—Belle City Malleable Iron Co. has awarded the general contract for a 1-story manufacturing plant addition, 77 x 96 feet, to Nelson Construction Co. (Noted Aug. 30.)

Southern States

LOUISVILLE, KY.—Henry Vogt Machine Co., Tenth street, manufacturer of ice making and refrigerating machinery, has awarded the general contract for an 8-story warehouse to H. A. Doll Co., Louisville.

TULSA, OKLA.—Tulsa Rolling Mill Co. plans to build a steel rolling mill, 135 x 142 feet, including an open hearth building, 132 x 135 feet, at Sand Springs, Okla.

WHITNEY, S. C.—Whitney Mfg. Co. plans to enlarge its machine shops and pumping plant in its textile mill. New equipment will be installed.

DALLAS, TEX.—Texas Highline Power & Light Co. has been incorporated with $25,000 capital by Henry Hutchings, W. M. Vick and Lee I. Starling.

GRAHAM, TEX.—Bolin Tool Co. has been incorporated with $25,000 capital to manufacture and deal in oil field tools by B. H. Bolin, R. W. Lindsey and Verney Anderson.

HOUSTON, TEX.—Diamond Electrical Mfg. Co. has been incorporated with $25,000 capital to manufacture electrical specialties by W. F. Wilson, Peter Sterk and Vernon Brown.

HOUSTON, TEX.—Elliott Core Drilling Co., 3210 Harrison street, will build a 1-story plant for the manufacture of oil well equipment. New property has been purchased for the construction. (Noted Aug. 9.)

SAN ANTONIO, TEX.—Southern Sign Mfg. Co. has been incorporated with 2500 shares of no par value stock to manufacture metal and wood signs by C. O. Maddox, Henry Yelvington and Gerald F. Mobley.

NORTH KANSAS CITY, MO.—Standard Steel Works, manufacturer of sheet metal products, storage and truck tanks for gas and oil, etc., plans to build a plant addition here, to be 120 x 305 feet.

ST. LOUIS—Chandeysson Electric Co., 4092 Bingham avenue, manufacturer of plating generators, plans to build a 1-story plant addition. One addition is now under construction for the company. Widmer Engineering Co., 201 Roosevelt building, is engineer for the construction.

WEBB CITY, MO.—O. W. Dunham is inquiring for lathes, drill press, band saw, jointer, bench tools, sander, etc.

Western States

West Central

MINNEAPOLIS—C. H. Will Motor Corp. plans to build a plant addition to double the plant floor space. One part of the addition will be a service department and another part will be for storage. The company manufactures trucks and buses.

KIRKSVILLE, MO.—City of Kirksville, H. Stookey mayor, plans to build a power and electric light plant. Burns & McDonald, Interstate building, Kansas City, are architects for the building.

KOCH, MO.—City of St. Louis has awarded the general contract for a 1-story power plant addition to Voelpel Building Co., 1113 Sidney street, St. Louis. J. J. Rilliet Jr., City Hall, St. Louis, is engineer. (Noted Sept. 6.)

EMERYVILLE, CALIF.—Plans are now being prepared for the 5-story plant which Western Electric Co., 680 Folsom street, San Francisco, is to have built here. (Noted July 19.)

PORTLAND, OREG.—City of Portland plans to build a 2-story high school to include manual training shops, etc. G. H. Jones, City Hall, is the architect preparing plans for the project.

SPOKANE—Safety Stepladder Co. plans the construction of a new plant at 3301 East Sprague street.

WALLA WALLA, WASH.—Harris Mfg. Co. has been refinanced and will resume the manufacture of farm machinery and equipment.

New Trade Publications

REFRACTORIES—Laclede-Christy, St. Louis, in a current bulletin shows views of various installations using its fire brick. A feature of the bulletin is a slide rule comparison of Centigrade and Fahrenheit temperatures.

MAGNETIC SWITCHES—General Electric Co., Schenectady, N. Y., describes its alternating current enclosed magnetic switches in a bulletin. Details and wiring diagrams are presented in illustrations.

LUBRICATION—Another of its series of bulletins on lubrication has been released by the Texas Co. It deals with the development of aircraft engine design and lubrication. It is illustrated by halftone engravings and diagrams.

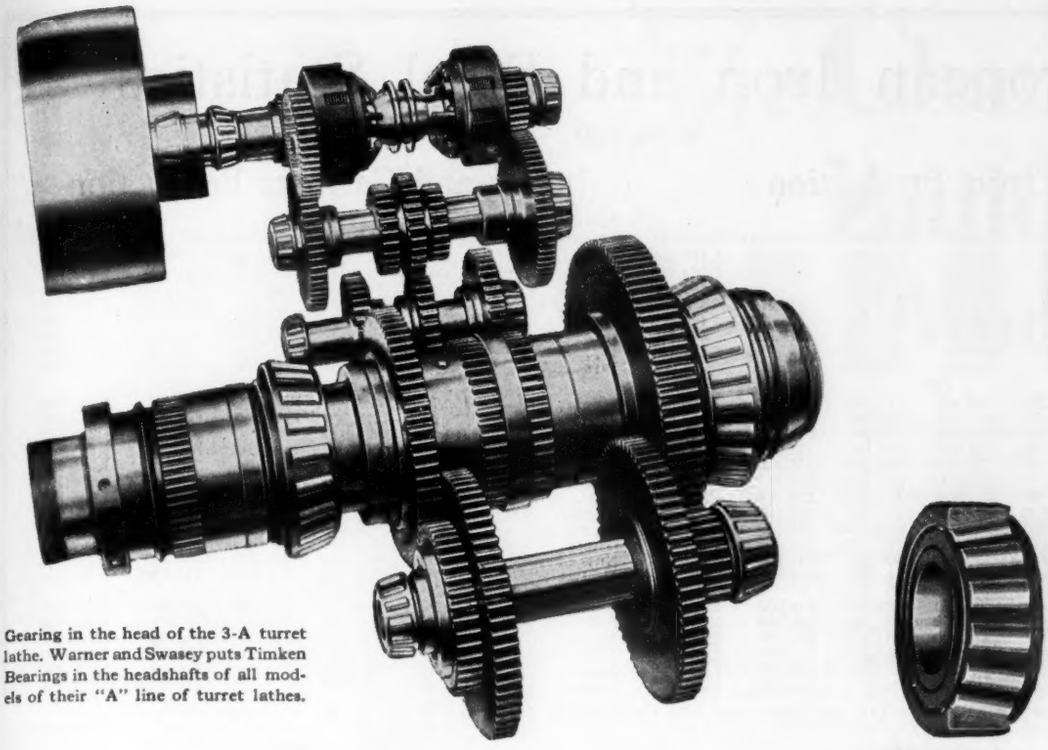
NARROW GAGE EQUIPMENT—Lakewood Engineering Co., Cleveland, has issued a catalog of its narrow gage cars, track, trailers, trucks and skids. It is fully illustrated and contains tables of specifications. Construction details are shown in diagrams. Accessories are also listed.

GASOLINE LOCOMOTIVES—A new catalog of its gasoline-powered locomotives has been issued by the George D. Whitcomb Co., Rochelle, Ill., replacing a previous catalog. It describes locomotives of 2½, 3½, 4½ and 5-ton weight, all driven by the company's motor. Halftone illustrations, line drawings and specification tables cover the locomotives and details.

WATER GAS—Semet-Solvay Engineering Corp., New York, has published a bulletin on carbureted water gas. It traces the development of water gas manufacture to its present position. Operating refinements to increase capacity, reduce costs, avoid danger of stream pollution, improve oil results, increase safety in manufacture, conserve steam production, reduce specific gravity when mixed are described in this bulletin.

RESISTANCE THERMOMETERS—A new catalog by the Leeds & Northrup Co., Philadelphia, covers its line of resistance thermometers, precision and semiprecision thermometers, recorders, controllers and accessories. Illustrations show installations of various types and details of construction. Diagrams show operation. The Wheatstone bridge theory is discussed and definitions of pyrometric terms are appended.

CAST IRON—Whiting Corp., Harvey, Ill., is publishing a series of bulletins containing technical articles on cast iron and its manufacture. They are written by Dr. Edward E. Marbaker of the Mellon Institute of Industrial Research, Pittsburgh. The first bulletin is on high test iron and others will treat cupola practice, use of sand and other subjects.



Gearing in the head of the 3-A turret lathe. Warner and Swasey puts Timken Bearings in the headshafts of all models of their "A" line of turret lathes.

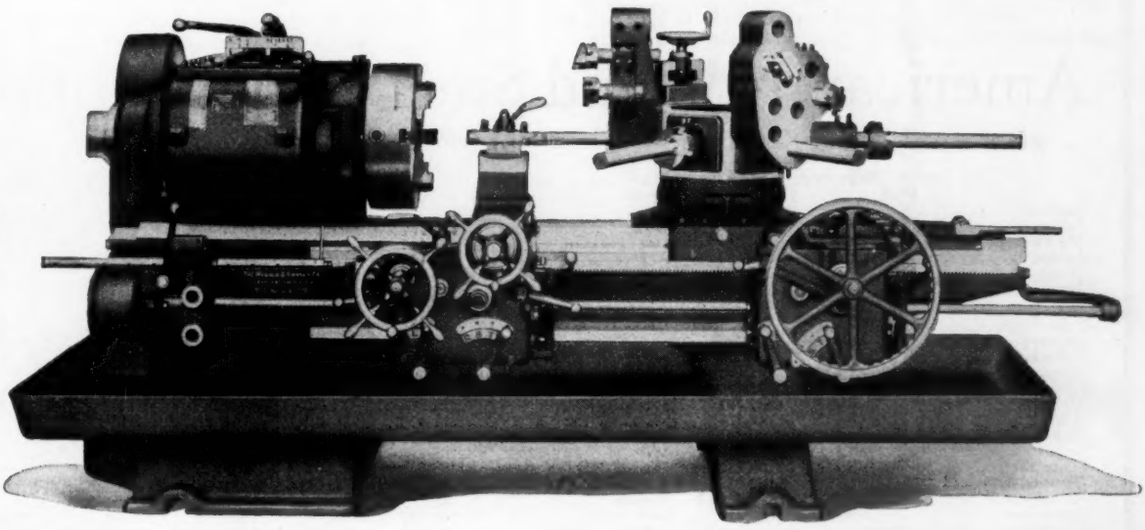
Warner and Swasey Uses Timkens for Longer, Accurate Machine Life

The Warner and Swasey Company, Cleveland, Ohio is another builder who features Timkens. And here are the reasons: Certainty of greater production and more satisfactory operation.

This further indicates how broadly the machine tool field has accepted Timken friction-elimination; Timken added rigidity; assured reductions in power costs and lubrication; and other performance betterments set up by Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken electric steel.

Timken Bearing greater load carrying area and thrust-radial capacity, gives far greater endurance and economy to machine tools.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO



Timken Bearings are used in the headshafts and on the spindle of Warner and Swasey 3-A Universal Hollow Hexagon Turret Lathe.

TIMKEN *Tapered Roller* **BEARINGS**

European Iron and Steel Statistics

Gross Tons

Pig Iron Production

Monthly Average	United Kingdom	France	Belgium	Luxemburg	Germany*
1912	729,000	405,000	192,000	184,800	1,279,200
1913	855,000	427,200	203,800	209,000	1,374,400
1921	218,000	280,300	71,800	79,600	643,200
1922	408,500	428,900	132,300	138,200	770,500
1923	620,000	445,600	179,100	115,400	404,700
1924	609,000	631,100	230,300	177,000	640,500
1925	521,800	696,800	208,500	192,300	834,500
1926	203,500	770,500	278,800	206,100	791,000
1927					
January	434,600	792,400	311,500	224,100	1,044,600
February	571,100	705,100	288,000	204,500	953,600
March	671,800	788,500	309,400	226,200	1,068,900
April	680,000	761,800	305,100	221,000	1,035,400
May	720,100	781,800	314,000	233,900	1,112,100
June	651,300	735,000	297,300	220,300	1,050,900
July	645,800	757,100	314,700	221,700	1,091,600
August	596,100	761,400	311,700	234,500	1,098,100
September	591,500	749,500	304,000	225,500	1,087,400
October	596,300	782,600	317,200	226,600	1,121,600
November	575,900	750,100	308,200	217,800	1,101,900
December	559,100	783,600	311,900	224,600	1,131,700
1928					
January	560,500	796,400	309,700	226,000	1,162,100
February	550,800	772,100	297,300	216,700	1,104,800
March	592,600	845,000	321,400	236,500	1,152,200
April	563,100	821,100	313,220	223,400	1,029,100
May	591,500	857,400	323,700	230,200	1,027,700
June	563,700	830,800	.....	226,900	1,005,400

Ingots and Castings Production

Monthly Average	United Kingdom	France	Belgium	Luxemburg	Germany*
1912	566,000	363,000	206,000	79,400	1,339,600
1913	638,600	384,500	202,300	109,000	1,445,700
1921	308,600	254,500	62,800	61,900	819,700
1922	490,100	372,000	128,400	114,300	960,500
1923	706,800	419,100	186,200	98,300	517,000
1924	685,100	566,000	234,700	154,300	806,500
1925	615,500	608,300	197,700	170,800	1,000,000
1926	296,700	687,900	276,800	184,100	1,012,500
1927					
January	730,700	662,900	315,700	192,300	1,288,500
February	826,800	618,200	292,200	181,300	1,214,300
March	949,600	692,900	309,700	199,800	1,393,600
April	850,100	669,900	296,400	202,800	1,269,100
May	884,600	700,800	316,100	206,900	1,356,200
June	747,300	661,400	295,100	200,000	1,307,200
July	687,100	666,300	309,200	199,800	1,341,100
August	643,100	683,200	320,600	212,500	1,409,700
September	777,000	682,400	285,400	209,600	1,353,600
October	699,000	711,600	307,200	211,800	1,392,300
November	698,700	671,300	305,200	204,200	1,380,000
December	604,900	723,500	305,900	210,500	1,351,100
1928					
January	626,200	738,300	310,700	209,600	1,446,500
February	764,400	726,500	305,600	201,800	1,301,300
March	793,300	791,400	321,600	216,900	1,398,200
April	644,100	726,500	300,300	199,400	1,143,300
May	752,700	781,600	320,100	211,400	1,228,300
June	709,000	784,600	.....	211,600	1,274,300

*German pre-war boundaries for 1912 and 1913; from 1919 the figures do not include the Saar district returns.

Imports

	United Kingdom	Belgium and† France	Luxemburg	Germany*
Average monthly 1912	166,400	16,400	87,000	27,300
Average monthly 1913	185,900	14,100	72,900	25,000
Average monthly 1921	136,700	41,300	43,300	54,000
Average monthly 1922	73,500	63,300	47,700	152,300
Average monthly 1923	110,200	58,500	43,700	145,000
Average monthly 1924	202,400	57,100	46,800	160,000
Average monthly 1925	226,700	14,100	44,500	98,400
Average monthly 1926	311,700	14,200	50,200	86,500
1927				
January	555,500	7,900	45,800	129,500
February	443,400	10,100	36,800	143,400
March	478,100	10,500	54,000	129,800
April	404,700	12,000	47,300	200,000
May	355,900	15,100	47,500	186,400
June	332,600	14,100	56,300	186,300
July	336,300	12,000	52,700	189,000
August	286,300	9,900	63,400	211,300
September	312,000	6,900	50,000	210,900
October	336,000	8,100	68,000	232,800
November	284,800	8,200	57,800	223,900
December	280,500	11,400	59,800	190,100
1928				
January	283,900	6,000	65,000	200,800
February	286,900	10,100	72,000	179,600
March	271,500	16,800	70,200	187,700
April	252,700	10,000	61,700	189,100
May	236,900	.....	63,800	164,800
June	210,400	.....	.....	.....

*Luxemburg is included with Germany in 1912 and 1913.

Exports

	United Kingdom	Belgium and† France	Luxemburg	Germany*
Average monthly 1912	400,600	41,500	124,500	482,400
Average monthly 1913	414,100	51,600	129,200	517,300
Average monthly 1921	141,400	133,800	75,600	160,000
Average monthly 1922	283,400	161,400	175,900	209,700
Average monthly 1923	360,000	181,900	207,900	110,000
Average monthly 1924	321,100	231,100	282,200	130,000
Average monthly 1925	310,900	321,700	262,800	267,600
Average monthly 1926	249,000	343,800	308,900	402,000
1927				
January	219,400	463,300	345,900	478,400
February	251,700	480,600	364,500	352,900
March	353,000	472,700	415,000	374,100
April	334,500	519,100	383,800	344,300
May	422,400	461,900	364,800	344,300
June	366,100	432,900	351,300	307,600
July	389,600	454,600	375,700	340,600
August	342,400	465,800	426,700	333,200
September	384,900	453,600	357,100	346,800
October	384,800	508,400	372,900	340,700
November	399,100	449,300	392,900	326,800
December	381,800	440,300	456,300	340,600
1928				
January	332,200	408,100	274,600	363,026
February	317,000	462,700	395,500	390,776
March	409,300	443,500	453,100	334,798
April	344,300	398,800	323,600	412,810
May	359,000	.....	332,700	378,500
June	365,900	.....	.....	.....

†Luxemburg included with Belgium from 1922 onward.

American Iron and Steel Exports, Imports

Gross Tons

	Imports	Exports
1928		
January	58,635	205,766
February	47,628	185,915
March	74,128	221,935
April	72,329	215,184
May	72,106	267,890
June	65,819	262,052
July	47,830	253,336
1927		
January	63,404	215,235
February	49,451	166,128
March	61,872	171,094
April	60,374	192,339
May	79,814	202,708
June	69,017	184,364
July	61,112	190,502
August	68,386	175,636
September	58,464	166,352
October	52,503	170,255
November	61,882	177,928
December	64,188	168,428
Total	750,467	2,180,969
1926		
January	79,067	174,585
February	100,213	157,187
March	93,107	169,438
April	107,636	194,449
May	108,731	173,418
June	124,215	159,506
July	82,411	194,717
August	91,578	171,588
September	85,484	182,071
October	81,830	172,070
November	81,259	219,830
December	75,559	198,189
Total	1,111,090	2,167,048
1925		
January	77,065	141,714
February	92,380	102,302
March	92,110	155,386
April	71,249	155,426
May	68,117	150,612
June	83,330	136,847
July	64,642	138,670
August	68,489	188,963
September	68,445	136,754
October	80,163	141,817
November	79,771	171,134
December	98,400	142,209
Total	943,240	1,762,571

Yearly Totals

1924	556,281	1,805,064
1923	734,734	2,009,141
1922	712,895	2,005,100
1921	135,825	2,150,276
1920	421,274	4,934,087
1919	322,264	4,397,295
1918	169,110	5,338,019
1917	330,301	6,465,053
1916	328,965	6,110,732
1915	282,396	3,532,564
1914	289,775	1,549,554
1913	317,260	2,745,635
1912	225,072	2,947,596
1911	262,457	2,187,725
1910	510,730	1,537,943
1909	363,984	1,243,583
1908	205,845	964,242
1907	662,358	1,301,981
1906	577,809	1,325,740
1905	416,000	1,011,255
1904	266,398	1,167,674
1903	1,178,797	326,590
1902	1,212,484	1,103,664
1901	221,297	700,852
1900	209,955	1,154,284

The Chanin Building, *New York*

Courtesy of Chanin Construction Company, New York.

The Chanin Building has 56 stories and is 702 feet in height. 15,000 tons of Bethlehem Sections were used in the steel framework.

The new Chanin Building is an impressive example of the tower office building. Like many other large buildings in cities of the United States, the Chanin Building has a steel framework constructed entirely of Bethlehem Wide-Flange Structural Shapes.

Bethlehem Wide-Flange Shapes—commonly known as Bethlehem Sections—are rolled on this Company's patented Grey Mills at Bethlehem, Pa., and Lackawanna, N. Y. When Bethlehem Sections were introduced, years ago, their economy in weight and in cost of fabrication was immediately recognized. Engineers, architects and contractors have extensively adopted these sections. They have been used in many prominent structures, not only in the United States but throughout the world.

33-inch and 36-inch Sections

Until recently the largest Bethlehem Section rolled had a depth of 30 inches. Today, however, this Company is rolling 33- and 36-inch Sections, extending the range of application of Bethlehem Wide-Flange Shapes and making it possible to more fully utilize their advantages and economies. These new deep Sections are having especially wide application in railway and highway bridges, as well as in building construction.

BETHLEHEM STEEL COMPANY

General Offices: Bethlehem, Pa.

District Offices:

New York Boston Philadelphia Baltimore Washington
Atlanta Buffalo Pittsburgh Cleveland Cincinnati
Chicago Detroit St. Louis San Francisco Los Angeles
Portland Seattle Honolulu

Bethlehem Steel Export Corporation, 25 Broadway, New York, Sole Exporter of our Commercial Products.

BETHLEHEM *Wide-Flange* STRUCTURAL SHAPES

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½
Lap Weld		
2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½
REAMED AND DRIFTED		
Butt Weld		
1 to 3-inch	60	48½
Lap Weld		
2-inch	53	41½
2½ to 6-inch	57	45½
EXTRA STRONG—PLAIN ENDS		
Butt Weld		
⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½
Lap Weld		
2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½
DOUBLE EXTRA STRONG		
Butt Weld		
½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½
Lap Weld		
2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized. Extra 5 per cent granted in the 4th quarter 1927 and 1st quarter 1928 discontinued April 2, 1928.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS

Butt Weld		
¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13
Lap Weld		
1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 3-inch	26	11
3 to 6-inch	28	13
7 to 12-inch	26	11
PLUGGED AND REAMED		
Two points less than above		
EXTRA STRONG, PLAIN ENDS		
¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14
Lap Weld		
2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld		
½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39
Lap Weld		
2 and 2½-inch	+13	+25
3 and 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	.....

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh carload discounts. Less carloads 4 points less

STEEL (Lap Weld)

2 and 2¼-inch	27 off
2½ and 2¾-inch	37 off
3-inch	40 off
3¼ to 3¾-inch	42½ off
4 to 13-inch	46 off

(Note—Additional discounts of seven extra 5 per cents now being given on 21,000 pounds or more.)

CHARCOAL IRON

1½-inch	+18
1¾-inch	+ 8
2 and 2¼-inch	2 off
2½ to 3-inch	7 off
3¼ to 4½-inch	9 off

(Note—Additional discounts of two 10's and one 2½ now being given on 12,000 pounds or more.)

SEAMLESS COLD DRAWN

1-inch	63 off
1¼ and 1½-inch	55 off
1¾-inch	39 off
2 and 2¼-inch	34 off
2½ and 2¾-inch	42 off
3-inch	48 off
3¼ and 3½-inch	50 off
4-inch	53 off
4½, 5 and 6-inch	45 off

SEAMLESS HOT ROLLED

2 and 2½-inch	40 off
2½ and 2¾-inch	48 off
3-inch	52 off
3¼ and 3½-inch	56 off
4-inch	59 off
4½, 5 and 6-inch	48 off

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.30 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Outside diameter	Gage	Net prices per foot f.o.b. Pittsburgh Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅜-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c

Plates less than ¼-inch or lighter than 11 pounds per square foot.

Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates Not Exceeding 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 10.2 pounds per square foot, to and including 7.65 pounds per square foot ..... .20c

Plates Over 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot ..... .20c

Plates ordered 7.65 pounds per square foot ..... .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull materials subject to U. S. Navy Dept. specifications for medium or soft steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. specifications, classes A and B	1.50c

Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet	No extra
Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)

Additional extra ..... .20c